May 1925

20 Cents

THE FLOWER GROWER

For all who grow flowers

ESTABLISHED 1914

Volume XII Calcium, N. Y., May 1925 Number 5

Mrs. Durrant's twin boys observing Arbor Day, Plainfield, N. J.

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HENRY A. DREER

1306 Spring Garden St., PHILADELPHIA, PA.

THE FLOWER GROWER

For all who grow Flowers

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FOR BOTH AMATEUR AND PROFESSIONAL GROWERS OF OUTDOOR SUMMER-FLOWERING PLANTS

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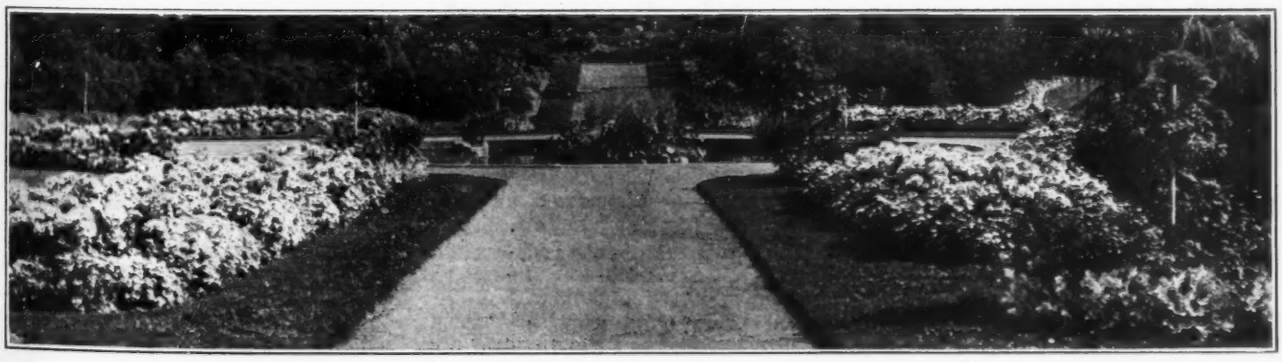
Don't Neglect the Flower Backgrounds

BY ANDERSON McCULLY, (Wash.)

WHILE we frequently see flowers mentioned as a footing for shrubbery, shrubbery as a backing to flowers does not seem so stressed. It may be because writers take it for granted we will supply the background instinctively; and yet as I view garden after garden with a critical eye, I see so many instances of apparently sleeping instinct. Flowers are so beautiful in themselves, sometimes we are prone to forget that the right frame enhances the values in the picture.

Shrubbery is not the only desirable

Pale pink and mauve and lavender Asters



Pink Geraniums and Ageratum against a formal pool

background, but in our city gardens do we especially need to take thought of what lays behind our flowers. And it is in these city gardens that the problem so often calls for real ingenuity. Trees and shrubbery demand space and sometimes a city garden is compelled to figure even the inches.

Even where there is no space for shrubs at all, the background may still be considered. Tall Hollyhocks against a lattice with lower flowers in the foreground, are equaled only perhaps by the charm of the tall swaying spikes nodding over a low brick wall. Skillful handling will make even the brick house walls a fitting complement to gay flowers; but there should in this case be much variety in the form of planting,—tall spikes and bushy spreadings,—to counteract the stern rigidity of the walls.

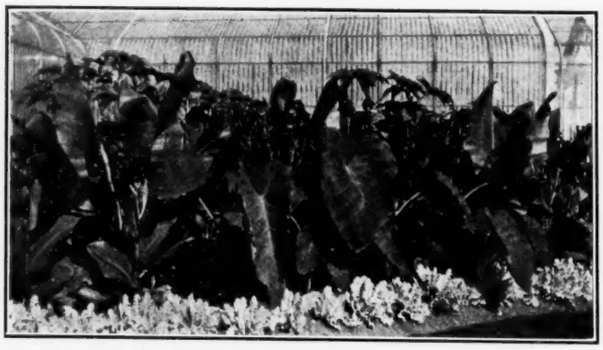
Sometimes a *Silver Moon, American Pillar*, or similar Rose on a trellis will answer. Or for a green of greater density, Ivy is often used with much success. Cotoneasters may also be trained against a wall. A green hedge—Holly, Laurel, Hemlock, Box, Berberis,—makes a splendid setting if the flowers are chosen judiciously. Tall and striking spikes of flowers toward the back break the monotonous lines of the hedge. Care should be taken to give as much depth and variety of surface to the flower planting as possible to balance the smooth face of the hedge.

PERSONALLY, I like a rather free use of conifers and closely allied families. They carry cool peace in Summer; friendly shelter in Winter. A little discretion needs to be exercised in their choice, for while many are very dwarf, others (according to the catalogues) quickly attain a height of a hundred feet or so! Both the Hemlock and the Cedar can be converted into a hedge by rigid pruning of all leaders and careful trimming. I have never seen the use of Retinisporas advocated in this manner in print; and I have not tried them myself; but I did see, once, a pleasing hedge of them that I should judge to be about six years old. The Japanese Yew (taxus cuspidata) also makes a good hedge or may be used as a background shrub. This is the best Yew for northern gardens. The English (taxus baccata) is hardy on the Pacific slope.

In any case, flowers need the broken skyline; the sense of enclosure or protection; and the darker and harmonizing background. How much more interesting are Japanese Anemones, in masses of pink and of white, against a clump of Redwoods or of Hollies, than are the same Anemones rising in an unattached mass. The Autumn Crocus, (crocus speciosus) blue-purple with long orange stigma, might be added to the foreground.

The mauve and pink and lavender masses of Asters seem almost too bunched and monotonous without the broken background of stiff Yuccas; the bronze foliage of the outspreading Malus; and the bushy Callicarpa Purpurea; with Birch and Fir in the still further background. Or take the border of pink Snapdragons against the gray-green of Spruce and Pine; and the occasional darker green clump of Redwood.

There is a difference in effect given by a bed of salmon-pink Geraniums bordered by Ageratum or Heliotrope, against a background of conifers; and the same bed against a formal pool. This is true, too, of the round bed of Heliotrope centered by a standard, and bordered with the low growing, gray leaved edging, against its particularly rich background.



Exotic effect against the outside walls of the greenhouse

Japanese Anemone against Redwood

Snapdragon

Hydrangea Hortensis

Could anything look better against the outside walls of the greenhouse, than the huge leaved Cannas, tropic in their size and gorgeousness? The glass seems a fit companion; fit in more ways than one; for it provides a sheltered corner from unwelcome frosts.

SEVERAL Daphne mezereums against a background of Yew or dark evergreens, with white Polyanthus in the foreground, is a fragrant picture to be long remembered. Against the same Yew background could be planted that other early spring combination of Anemone blanda; running from almost gray to deep azure; and Daffodil cernuus, a soft cream-white.

Helenium striatum, massed near a purple Filbert or Prunus, gives a striking color combination; and the soft pink flower spikes of Hydrangea paniculata show up well against Berberis purpurea, and can be still further brought out by an Oak tree

in the background (quercus coccinea superba). Hydrangea hortensis against an evergreen planting of trees as pictured, does away with any stiffness; and Montbretia goes well against Yuccas and Pampas. Masses of pink and of white single Dahlias, running into a bay of Holly and Redwood, have rare charm that seems to carry a touch of woodland feeling with it. Cosmos running into Firs, while not so striking, has much the same effect.

Heliotrope

Very different in its brilliancy was a slope I saw planted in bold masses of dwarf-growing, large-flowering, brilliant yellow Chrysanthemums and lavender Michaelmas Daisies, with Spruce of dwarf habit backing them and brought forward in irregular lines.

A combination that I particularly like, is composed of shell pink Snapdragons in masses; fronted by the fragrant dwarf Heliotrope, and backed with an evergreen planting of Retinisporas, Junipers, and Berberis. A dwarf bronze-leaved tree will add a pleasing note of accent and harmonizes well with the flower colors. I know such a border that is still further augmented by several Magnolia trees. This of course means space, but the border I have in mind is on a city lot; and not a corner lot either.

I am coming more and more to believe in Trees in the Flower Garden. There was a time when I begrudged them the space and the sunshine they took. But they aspire so loftily to the sun; and they pattern the garden with such a delicate tracery of light and shade; and add the needed touch of mystery to the skyline. The charm of gardens is permeated by the mystery touch.

I often wonder if the Victorian bedding out, did not largely fall into disrepute just because of the uncompromising display of all its charms in one view. Try bringing the background planting forward occasionally to screen what lays beyond. It piques the interest as well as the eye. We are all of us explorers at heart. This bringing forward and cutting off, gives the illusion of spaciousness and distance, and the imagination goes forward when the vision ends. It leaves a pleasant sense of quest and discovery;—but don't forget your implied promise;—see that something actually does lay beyond.

Give Us Fewer New Dahlias

HAVE just read with considerable interest your editorial, also the special article, about the multiplicity of new Dahlias, many of them inferior, or just on par, with outstanding varieties.

I grow Dahlias for the pleasure I get out of them, am not a dealer in any sense of the word, therefore Dahlias are not an investment, except for the blooms I get from them. Since the originators and dealers must eventually sell their new varieties to amateurs such as I, their hopes for the future must lay in satisfied customers. Before last year I had never paid more than $2.00 a tuber for any variety, but the catalogs were tempting, and the "urge to splurge" got the upper hand of my better judgment. I loosened up my purse strings for several new, and expensive varieties. Sad was the day; and as a result of the disappointment I have decided never to pay more than $1.00 for a variety unless it has been on the market at least three years, and is listed with at least one dozen growers.

One of the new varieties I bought was listed as "similar to XYZ, only better, all the good characteristics of that variety, with better color, and a stronger stem; much larger blooms, often 10 inches without disbudding." Maybe so; but so far have been unable to distinguish any difference in the two varieties, if they are separate varieties. No chance of getting them mixed, had already finished my regular planting when the package came. Probably the new variety I bought WAS a new seedling, but the differences between the new and old variety were so slight that the difference in price shouldn't be $9.65. Even if it should show its new characteristics this year, having become acclimatized as the dealer who sold me suggested it would, I'll still be disappointed. That is a flagrant case. Of course, there were others, but it still leaves a bitter taste.

The amateur must start somewhere. Catalogs, each claiming the "world's best," and at least three claiming the "world's largest," profusely illustrated, lay before me, but they no longer have a selling appeal to me. The grower who simply lists his varieties, the originator, their class, color, and price, will most likely get my business, for he gives indications of being the most satisfactory to deal with. He'll have more time to work with them, and less will be taken up with catalog making,—studying up florid descriptions to trap the unwary.

The remedy is "up to" the growers themselves, and they can find a solution to the problem,—that is, if they want to. Possibly they could collectively support a trial grounds for the rating, and comparison of varieties. This would cover comparison of new seedlings with varieties which are similar, and already cataloged, also comparison with other new seedlings which are similar, and should also have disinterested parties rate the new seedlings according to their merits. These new varieties could then be bulletined in THE FLOWER GROWER, and would relieve catalogs.

Guess the above suggestion is not new, but it's the best that comes to mind at the present. If the present flood of new Dahlias keeps up, there will be no market for them. The amateur will just give up in disgust, and shall I say it?—Start to growing seedlings,—from seed.

S. T. CARTER, (N. C.)

Separating Dahlia Tubers

I note the article on separating Dahlia tubers. Some of the tubers are attached to the stalk so that some of the eyes are often broken off. I have found that a stiff three inch bladed knife with a very sharp point, together with a small keyhole saw, will save time and make this work very easy. Try it!

ED. O. DAVIS, (Mass.)

Cutting Dahlia Tubers

I have a very simple method of cutting Dahlia tubers. I use an asparagus cutter and small mallet. This does not bruise bulbs, as I lay them on a pile of crumpled newspaper or a mound of sand. I hold the cutter with the left hand and tap the handle lightly with the mallet.

A pruning knife with a curved blade is also good.

J. A. HOOD

Although we have no department heading for our Dahlia material this month, don't overlook the fact that there is some valuable Dahlia information in this issue of THE FLOWER GROWER. Refer especially to the Queries and Answers department and see what Brother Bolles has to say about propagating Dahlias from cuttings.

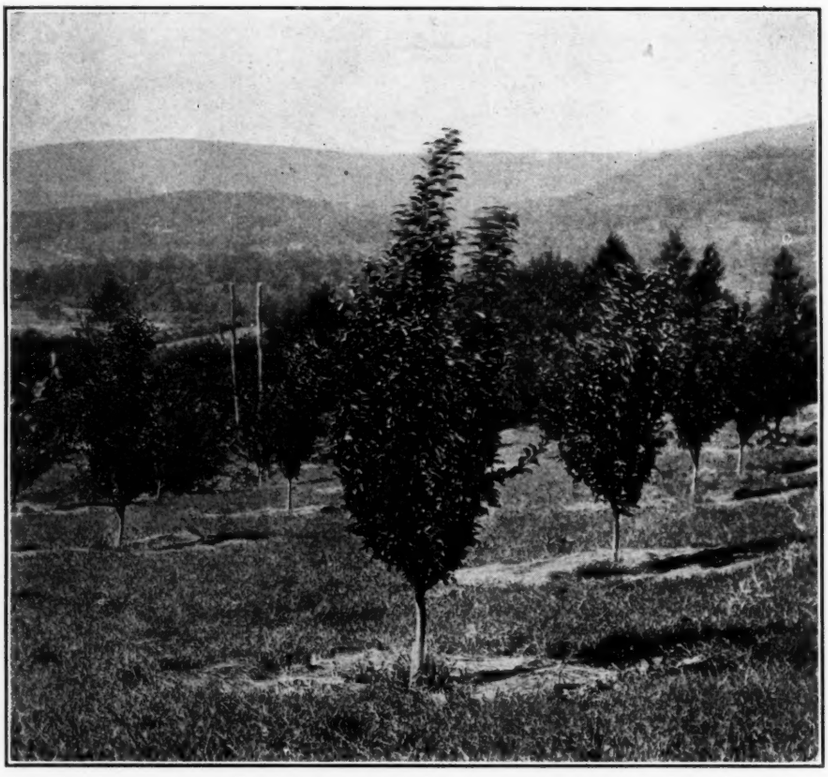
The Fruit Grower and His Problems

Conducted by Ralph A. Van Meter
Professor of Pomology, Massachusetts Agricultural College
Amherst, Mass.

Soil Management of Fruit Trees

BY R. A. VAN METER

THE tree must depend upon the soil for its mineral food supply, and the food available in the soil is profoundly affected by the way in which that soil is handled. Soil management therefore is of first importance in the orchard and should receive the careful consideration of every fruit grower. In small orchards in particular, soil treatment is often overlooked entirely and this oversight may be responsible for poor crops of poor fruit. In other orchards soil management is confined to an occasional application of manure or other fertilizing material, and still falls far short of its possibilities.



A fine sod mulch Apple orchard. Note mulch drawn in to the trees. This orchard has been well fertilized

The purpose of soil management is to provide the tree with the proper amount of water and mineral foods through the year. Since soils differ and climates are various, methods of handling soils to provide food and to conserve moisture must be varied accordingly, and a system which is highly effective in one orchard may not be at all satisfactory in another. The behavior of the trees measures the efficiency of the system of management. If they grow satisfactorily and bear well over a period of years they must be satisfied with the treatment, and little fault can be found with it.

Fruit growers recognize two general systems of orchard management: (1) Cultivation and cover crops; and (2) Sod mulch. Each of these is flexible, as a scheme of soil management should be, and admits of many variations to suit particular conditions.

CULTIVATION AND COVER CROPS

In following this system the land around the trees is plowed in early Spring and cultivated until July. Then a cover crop such as rye or buckwheat or vetch is sowed, or weeds are allowed to grow to help the trees ripen their wood, by removing moisture and plant food from the soil, and to cover the ground during the Winter. In the following Spring the cover crop is plowed under when it adds some fertility to the soil.

Cultivation in general is adapted to any location and soil where tillage is possible, but it is particularly effective on drouthy soils and in regions where the summer season is likely to be hot and dry. The system admits of many modifications. In young orchards, vegetable or field crops are often grown between the trees until the trees reach such size that they need all the ground. In older orchards it is often sufficient to cultivate the land between the rows which is easiest to work, leaving the tree rows in strips of sod.

SOD MULCH

A large number of fine commercial orchards in New England, and in many other fruit growing sections, are now handled very satisfactorily in sod. This system has many advantages and it is particularly adapted to the small orchard where proper equipment for cultivation is not available.

The system consists essentially in securing a good growth of grass under the trees; by fertilization if necessary; and in cutting that grass to form a mulch over the root system. The secret of success lies in maintaining a good mulch, and the drier the location the heavier the mulch must be. In small orchards it is often advisable to bring in outside materials such as marsh hay or refuse from the garden and add them to the mulch grown in the orchard.

In mature orchards all the ground is mulched but in young orchards, and with isolated trees, the mulch is often brought in and piled above the most active part of the root system. This is a broad circle under the tips of the branches, extending in about half way to the trunk, and nearly as far beyond the ends of the branches. Mulching materials should be kept away from the trunk of the tree, for they harbor mice and they may girdle the tree by gnawing away the bark. The fire hazard also should be considered. If a heavy mulch burns next to the trunk the tree is likely to be killed, but if the mulch is kept away from the trunk only the lower branches may be injured.

Even in fertile soils, nitrogenous fertilizers usually are necessary to maintain the vigor of trees under a sod mulch system of management. Occasionally, but not often, they are needed in cultivated orchards. Nitrate of Soda and Sulphate of Ammonia are the materials preferred by most fruit growers, and they are scattered on top of the mulch as soon as the trees come to life in the Spring.

Nitrogenous Fertilizers for Fruit Trees

WITHIN reasonable limits plants which grow vigorously are most fruitful. It is possible to make a fruit tree grow too rapidly but that is seldom done; and a large percentage of the trees in small orchards are producing far below their capacity because they are starved. A little fertilizer, used with judgment, will work wonders in such plantations.

When Potatoes or Cabbages are grown and harvested for years on the same land, fertilizers are invariably applied, for we know that steady cropping is a drain on the fertility of any soil. When an Apple tree grows and produces fruit for twenty years in the same spot we too often forget that it is likely to run short of plant food.

The wide spreading roots of Apple trees, however, are able to secure enough plant food of most kinds. While garden crops need fertilizers containing nitrogen, phosphoric acid, and potash, fruit trees usually run short of nitrogen only; and long and patient research has shown that, on most soils at least, the nitrogen part of the fertilizer alone is just as effective as all of it together. Leading fruit growers everywhere have discarded complete fertilizers for quickly available nitrogenous forms, principally Nitrate of Soda or Sulphate of Ammonia.

Either of these materials is very effective in an orchard and fruit growers are using them more and more freely, for they have found that when trees stop growing they soon become barren. Trees make their growth early in the season, and the fertilizer should be applied as soon as the trees start to grow, which will be two weeks or so before apple blossoming time. Three to five pounds is usually about right for a devitalized Apple tree which is ten or twelve years old. Old Apple trees may require as much as fifteen pounds each to restore their vigor, but there is no uncertainty about the result and the investment is small. If any of your trees are slow-growing and weak, try an application of Nitrate of Soda or Sulphate of Ammonia. You will be delighted with the prompt response of the trees.

When Fruit Trees Grow

Growth of fruit trees starts early and most of it is completed in a surprisingly short time. The so-called Grand Period of Growth of bearing Apple trees starts in May and ends in late June. A few days more and most of the shoots have formed terminal buds, and their longitudinal growth is over for the season. Young Apple trees may grow for a longer time but the increasing dryness of July and August slowly puts an end to the lengthening of the shoots. They continue to increase in diameter and gradually harden the new tissues in preparation for Winter.

This early growth of fruit trees must be taken into account in applying fertilizers or in cultivating to increase the supply of plant food. It takes a little time for even the most readily available fertilizers to affect the trees, and they should be applied as soon as the trees start to grow, which is soon after the buds break. Cultivation should be started as soon as the soil is dry enough to work.

Plant Growth and Fruitfulness

BY R. A. VAN METER

GROWTH is a measure of vigor in plants, and a clean vigorous growth is the first step toward large crops of fine fruits. We once thought that trees and shrubs which grew rapidly would produce little fruit; now we know as a result of long years of careful trial that the more a plant grows, within reasonable limits, the more fruit it will bear. More fruit trees are falling short of their possibilities because they are devitalized by starvation, than because of any other one thing.

When a tree is set, the first job of the fruit grower is to grow a strong tree to profitable bearing size as soon as possible. The amount of growth in one season is limited to what can be grown early and ripened to withstand the Winter. In most sections this is more growth than is generally secured. A young Apple tree in its second year might as well grow twenty-four inches, as to take three or four years to make that growth; but, to be entirely safe in the most severe climates, whatever growth is made should be finished in July and the rest of the season utilized in ripening the new wood. Trees do not winter-kill because they make a strong growth, necessarily, but because they make a late growth, or possibly in some cases because they stop growing too early and are too ready to become active again when the first thaw comes in mid-winter. Starved trees are more prone to winter-kill than those which make a normally vigorous growth.

A highly productive Raspberry patch. Note height of canes. Good growth is the first step toward fine crops

Too much growth is a possibility but it is rare. For every Apple tree or Currant bush or Grape vine which is growing too fast to be productive there are scores which are producing small crops or none at all because they haven't vitality enough to set and mature full crops.

HOW MUCH GROWTH?

The growth necessary to maximum production varies with the kind of fruit, the variety, and with the age of the plant. A new-set Apple tree should grow faster than an old one; a Grape vine must grow more than a Peach tree to be equally productive. A few ideas which apply generally may be set forth; but, as with every other recommendation, experience only can dictate the finer adjustments.

Bearing Apple trees as they approach maturity should add six to ten inches of new wood each year over most of the top. Peach shoots which are twelve to eighteen inches long are more productive than the short slender growths common on devitalized trees, and they stand severe Winters

much better. A shorter growth on Plum and Cherry trees is satisfactory, for they do not depend on new wood alone for fruit production, but bear also on spurs. New shoots must be produced freely by Currant and Gooseberry bushes, for the branches tend to become barren in a few years, and should be removed in favor of younger, more vigorous wood.

Are all of your Apple trees, your Currant bushes, and your Grape vines making enough growth to be fully productive? Examine them and see. If some of them are holding back, cultivate or mulch them better and fertilize them more heavily, for there is always more satisfaction in taking care of trees bearing heavy crops than in working with partial crops of inferior fruit.

Notes On Spraying

SPRAYING MATERIALS

Nearly every year marks the introduction of one or more new spraying materials. Very few of them are able to make permanent places for themselves, and most of the new materials soon drop out. They burn the trees, they fail to control pests, they are too expensive, or for some other reason they are found to be inferior to the older standard materials. We need better spraying solutions, but fruit growers will avoid a great deal of trouble and disappointment if they will let the experiment stations approve new materials before they risk trees and crops by using them in their orchards.

SPRAYING SCHEDULES

An enormous amount of experimental work has been done on the control of pests by spraying. The advent of a new pest is followed closely by the development of an effective means of control. By careful tests, control measures are sifted out by the experiment stations until the best are found; and they are then recommended. This work is of particular value to the fruit grower for it enables him to control insects and diseases in the orchard as cheaply and as easily as it can be done. Judgment must be used in following any recommendation, but pest control measures are quite specific and the fruit grower who ignores the spraying schedules in favor of new and uncertain methods is likely to come to grief.

Every section has developed spray schedules or calendars for the common fruits. They are distributed free of charge by the agricultural colleges and by county agricultural agents. They give definite directions in compact form as to the time to spray and materials to use, and every grower of fruits should keep the spray schedules for his locality close at hand during the spring months. There is one best time to make each application, and the choice of materials is very restricted. Spray with the right materials at the right time and no ordinary pest can escape.

THOROUGHNESS IN SPRAYING

A little spraying properly done is better than a whole season of careless splashing around. The ideal in spraying is to cover every spot on the tree—every branch, every twig, every fruit, and both sides of every leaf—with a thin coating of spray material, impenetratable alike to insects and to the spores of plant diseases. Like most ideals, that one can seldom be attained, but the nearer the approach to it the more effective is the spraying.

Such spraying can be done with a fine mist-like spray only—a fog which drifts and settles into places which cannot be reached directly. A fine mist necessitates a spray nozzle with a small aperture, and the lower the pressure maintained by the spraying machine, the finer the nozzle must be. Spraying materials are corrosive, the disc in most spray nozzles is steel, and the hole is likely to be enlarged after a year or so. The discs, therefore, should be replaced frequently.

It takes time to spray a tree, and speed should never be allowed to interfere with thoroughness. This is one job which must be done carefully. A few magic passes with the spray rod or spray gun are lost entirely on the unregenerate pests which infest our orchards. A little spray material dripping from the tree will not harm the soil and it is impossible to cover all the tree without getting an unnecessary amount in some places. Spray at the right time and be thorough.

Currant Borers and Currant Worms

BORERS are common in Currant bushes, especially those bushes which have not been pruned for several years. The borers appear in June and during the Summer they eat out the pith and weaken the canes. The borers pass the Winter in the burrows, and emerge as moths about June first of the following year.

In May, stems in which borers worked during the preceding Summer (and from which the borers have not yet emerged) often have yellowish leaves and a general appearance of debility. If such canes are removed and burned immediately the mature borers are destroyed and the spread of the infestation is checked. The borers leave the canes through rather conspicuous holes. After these holes appear it is too late to expect any results from destroying infested canes.

Currant worms are such common pests that almost every gardener is familiar with them. They eat the leaves and are such voracious feeders that they will often strip the foliage from a Currant bush in a short time. Their greediness is their undoing, and a little arsenate of lead, sprayed or dusted on the leaves, quickly destroys the colony. Use powdered arsenate of lead at the rate of about one ounce in one gallon of water.

Sometimes Currant worms appear when the Currants are ripening. There probably is little danger involved in eating fruit soon after it is sprayed, but, just the same, most of us would rather not experiment along that line. It is best to use on ripening Currants, a spray which soon loses its poisonous qualities when exposed to the air. Hellebore is such a poison. It may be sprayed on, mixed at the rate of one ounce in three gallons of water, or it may be mixed with flour or air-slaked lime, using one part of fresh hellebore to five of the carrier, and dusted over the plants.

Fertilizing Strawberries

THE fertilization of Strawberry beds in the Spring of the bearing year is practiced successfully by a few Strawberry growers; but it is one of the finer points which should be undertaken very judiciously. Most growers prefer to do their fertilization during the preceding Summer.

When Strawberry beds come through the Winter in poor condition, however, a light application of fertilizer may help them wonderfully. In the Concord section near Boston, Strawberry beds are often given a light application of Nitrate of Soda or Sulphate of Ammonia in Spring. It is applied to the rows by hand after the plants have grown sufficiently to raise their leaves well off the ground. Mineral fertilizers may burn Strawberry leaves with which they come in contact, and the fertilizer is kept off the leaves by reaching under them and scattering it thinly on the ground between the crowns. About one hundred pounds of Nitrate or Sulphate are used per acre.

Such fertilization is attended by some danger. Too much nitrogen produces large, soft berries which rot quickly; cannot be shipped far; and in general are difficult to handle. An excess of moisture at harvest time has much the same effect. Too much nitrogen and a wet season may make a disastrous combination, so it is important that the application should be a light one. But if the plants are not in full vigor a light application may greatly improve the size and quality of the berries.

Several fruit notes from this department are held over for use in the June issue.

And don't overlook Prof. Van Meter's editorial entitled "The Secret of the Plant Wizard," on page 190. It is not only worthy of reading by fruit growers but by anyone interested in growing vegetation of any kind. The so-called secret of success in any line of activity may be gleaned from what is said editorially in this issue.

The Peony

Effective Methods at Blooming Time

BY EDWARD AUTEN, JR.

PROBABLY many a Peony fan has wished when his Peonies bloomed he might have a three weeks' vacation from his regular occupation; that the weather would be calm, cool and fair every day; and that all his friends might come from no matter how far, and share with him the beauties of his gardens. But alas, important business matters have a way of coming along with discouraging regularity; we are tied to our offices; it rains torrents at times; and many of our friends cannot come; so that there are bound to be some disappointments mingled with our pleasures.

Many things can be done, however, to forestall these trials. One year it rained continuously here throughout the whole season; but even under such conditions one might have much pleasure from his Peonies. Probably the most important item is to support the plants in some way so that the blooms will be kept out of the mud. Rain does not do a bloom any good, but if a bloom is clean, much water can be shaken out of it, and it will last for some time thereafter. Seven to ten foot lengths of 18 to 22 inch chicken fencing make a very satisfactory support. It can be lapped over to make any sized circle; does not disturb the roots; and can be removed and stored mediately after blooming. No support should be so tight as to draw the leaves close together, as that makes ideal conditions for the spread of blight. Better make the circle large enough for the stalks to bend outward, the stems supported close behind the blooms. This latter prevents broken stems, where as in the case of some large blooms the stems will break six or eight inches down from the weight of extra water if they are supported erect. Less obtrusive iron pins and a stiff wire circle may be used if one wants to go to the trouble and expense of getting them made, but they are no more effective than the chicken wire which is always obtainable. Some enthusiasts even erect canvas shelters over each clump to keep off rain and hot sun, but that is quite expensive, and has few advantages over cutting some of the blooms and keeping them indoors.

While a few people do not like to cut any flower, one should, if possible, have enough plants to be able to cut all he wants and still have a show in the garden; for flowers in the home and at the office, at church and sent to friends, can add much to our enjoyment. Moreover many kinds, of most delicate coloring, show their true beauty only when opened in the subdued indoor light, away from the hot bright sunlight; and a bloom will last longer in water indoors than on the plant. It is surprising how the development of the bloom may be controlled by different methods of cutting and handling.

THE most important points in cutting are these:—For the sake of future growth and bloom, leave at least two, or better three, leaves on each stub; or if cutting full length stems, take only two or three from each large clump. Second, set the bloom immediately in water. (Carry a pail with six inches of water in it when you go to the garden.) Third, cut a bloom before it is entirely open. (Use a sharp knife, not shears.)

Other points depend on the use to which the bloom is to be put. If it is to be put in cold storage to be held for a late show, or is to be sent on a long railroad journey, all the leaves or all but the top two or three should be stripped off. A stem can hold only so much reserve water, and if the leaves are left on, water evaporates through them and the bloom is robbed. Last year I sent blooms on a three day, 2,000 mile, trip to California, across hot deserts, and received word that the blooms all opened nicely after arrival. If blooms are to be held only a few days, or used at once, the lower leaves only, say one or two, can be removed for ease of handling and arrangement.

It is almost an art to know when to cut a bud for use on a definite future date, and a knowledge of the habits of different varieties is a great help, almost a necessity for continued success. Suppose you want to decorate for some large service or function and you fear that it will storm the day before. You can make certain of having good blooms by going to the patch two or three days beforehand and picking blooms nearly half opened, then storing them in a cool dark cellar till a few hours before needed. I favor standing all stored blooms in water; but good results may be had by standing them in water for about four hours, by which time the stems will have loaded up with water, and then laying the blooms out in such a manner that the petals will get no drip or contact from near-by stems. Specimen blooms can be held to make a larger show at any one given time for visitors, and of course the season may be lengthened several days by storing some of the latest varieties.

For commercial storage, the rule is to cut when the first petal raises, which usually means that the bud is about the size of a small walnut and quite hard. But this will work only with the few tested commercial varieties, while dozens of our fine show kinds would not respond to such methods at all. Moreover the florist opens these long held blooms as slowly as he can, often taking several days, and I must say that some of the blooms I have seen offered would not appeal to a Peony lover.

Last Summer when preparing for the National Show, being rather south of the main Peony fanciers, I had to hold some blooms twenty days, and I picked six hundred blooms, trying to get them when the upper third of the bud had started to soften. This stage often lasts only a few hours, and it is important to get the blooms into storage as soon as possible to check further opening. I lost my first and finest blooms from all my *Therese* for show purposes by being away at a private display I put on in Peoria, when they opened; and for the National Show had to be content with the second grade blooms. But of the 600 blooms I took on the twelve hour trip to Des Moines, none had gone by, most of them opened perfectly, even *Umbellata Rosea*, and some *Officinalis Rubra*, very early kinds, and only about 40 failed me; these being hard opening kinds, or late, like *Eugene Verdier*, *Mad. Fould*, etc. But about half of these developed on the second day of the show.

AS A rule, the first few blooms on a clump are the largest and best, but it is often impossible to time the first bud, so I make it a rule to wait until the first bud is safely opened. It may hang for a week after it seems ready, before it actually opens up; but after it starts, the others are pretty sure to follow without delay. Blooms for local shows may be cut when open and taken direct to the show room, but it is much better to cut them ahead of time, if even only twelve hours, and let them load up with water. They stand handling and arranging much better. This is also true when you are giving or selling blooms to visitors at the garden. Blooms cut and then laid in the bottom of an auto for a couple of hours will wilt down, and while they may revive later, they are damaged, and will not last as long as if they had been prepared a couple of hours even in advance. Blooms should be cut when the petals are dry if possible.

Blooms may be kept in the home ice box, but if a cold storage plant is available it is much better. I have fallen back on our local butcher, and though he ran the temperature down to 29 degrees nearly every day, and some of the leaves showed the freezing plainly when taken out, still they all recovered in good style. Probably 34 degrees is as cold as could be recommended, and 40 to 45 is effective.

Peonies out of storage should be shipped dry in tight paper lined

boxes, to keep out the heat and, if possible, should be packed in the storage room. Then when unpacked, the ends of the stems say a half inch, should be cut off and the blooms immediately stood in water. This will hasten the opening process, which begins with the first rise in temperature.

All blooms for shows should be sacked, either several days before the buds are cut, or just after cutting and before storage. I had good results with the latter method, using one-pound grocers' sacks, though on some kinds half-pound and on others two-pound sacks might be better. These sacks should not be removed until staging the blooms at the show, just after cutting off the ends of the stems. Blooms stored in cellars or cold storage without being sacked should be handled with especial care to avoid wetting the petals. In sacking, be very careful to keep the bud close to the mouth of the sack, so as to leave room for the expansion of the flower. It is much harder to tell when a bud should be picked if it has been sacked early, one having to tell by "feel" alone through the sack.

There are some very fine kinds which even for home use should be sacked, as they have a way of half opening very early, and subsequent rains are held in the bloom and rot the petals. Among these are sometimes *Solange, Mad. Lemoinier,* the lavender-tinted one, *Mad. de Galhau,* etc.

OF COURSE, most of your Peonies should have been disbudded when the side buds were the size of small hazelnuts, but the season can be lengthened by pinching out the center bud and leaving one or all side buds on a few stems of each variety, and a few stalks should not be disbudded at all as the effect of a cluster of blooms is very fine. This is especially true of many singles. Do not disbud with shears, take the bud between the thumb and forefinger, turn it at right angles, and then pull gently. This will cause it to part at its base, and will not injure the main stem. I lost some fine blooms by disbudding when the buds were too small and by so injuring the main stem that the remaining buds all blasted, before I learned these points. Burn all buds picked off, and disinfect your fingers often or you will unknowingly spread bud blight.

Here again let me repeat my spray formula for those who have not seen it; one pound of bluestone and one-half pound of hydrated or stone lime to 50 gallons of water. This will not discolor the foliage, and it will prevent bud blasting and blight if done in time. Spray with a fine mist, and cover stalks, leaves, buds, and ground beneath; if only once, when the buds are the size of hazelnuts, but once earlier and after the blooming season if blight should be bad.

Peony blooms can be mailed surprising distances if picked right; stood in water three or four hours in a cool place; most or all of the leaves stripped and then packed dry and snug. It is better to wrap each bloom in paper if possible, but it is so much trouble I never do it. Blooms I sent to California were only the standard commercial kinds, such as *Edulis Superba, Mme. De Verneville,* etc., and they were picked when the buds had barely softened. For a ten-hour, two-hundred-mile trip, the blooms can be even one-fourth opened. But it is a waste of effort to try to send fully opened blooms. Flowers should always be sent special delivery if by parcel post. The extra fee is only a small part of the cost of raising and packing the blooms, and in no other way can prompt delivery be assured by mail.

When cutting for home decoration, where size of blooms is not most important, least harm is done to garden effect if blooms are cut from around the outside of the clump. These are the ones which often get down in the mud after a rain. While we talk about stiff stemmed varieties, I know of only two kinds which will hold their blooms erect after a hard driving rain,—*Umbellata Rosea* and *Eugene Verdier,*—though many others will make valiant effort to do so; and will come through a moderate storm all right. But it seems we are doomed for some time to support our Peonies in some way if we want to avoid the look of ruin after a hard storm. Maybe sometime we will have many high-class, stiff-stemmed varieties; but it will take more than one lifetime to see all that accomplished, and in the meantime if we will take some pains with them, we can have a long season of bloom in spite of rain, hot weather, and wind.

Peony—La France

I WAS interested in your notes on Peony *La France* in the February number of THE FLOWER GROWER. This is what we call a slow growing variety and such not only take more than the usual three years to become well established and give typical bloom, but also increase more slowly than most kinds. *Karl Rosenfield* is an opposite extreme in this regard.

These slow growers must have some different blood in them, as the root is a little harder,—not woody, but suggestive of it; while quick growers like *Karl Rosenfield* are not so hard nor brittle. *Adolphe Rousseau* is a vigorous grower, but resents too close or improper division. Most of the Japanese Peonies, of Japanese plant habit, are slow growers, and must not be divided too close. I used to sell *Mikado* for $1.50, but have raised to $2.50 for a standard division, and am not trying to sell it at that price, since it sells on sight and will be in demand for many years. *Mons. Jules Elie* does not increase as fast as many other kinds, and a seedling of this variety yielded me only three divisions after it had bloomed four seasons, while many seedlings will give ten to fifteen in the same time. *Standard Bearer* is also extremely slow.

Tardiness in yielding bloom is of course made worse if a root is infected with root gall or crown rot. In the latter case, hot weather or sandy soil increase the difficulty of the impoverished crown supplying enough water and nourishment to the growing buds. Bud blight may reduce the yield of blooms. Thus other causes than an inherent tendency to slow growth may limit our crop both of blooms and of roots.

La France at its best is surely a magnificent bloom, with a beautiful rose fragrance. While I instinctively shy away from the dotted varieties such as *Asa Gray* and *Triomphe de l'Exposition de Lille,* I must overlook this in *La France,* for its refinement of color and texture is superb.

EDWARD AUTEN, JR.

Peonies for Porch

ABOUT Peonies as porch plants, I should advise that no Peony of value be placed into such an unnatural situation. The Peony is slower than almost any other plant to recover from the shock of moving. To use a root of the size commonly employed when Peonies are transplanted would require long waiting and during that waiting the root would be pretty certain to be allowed to dry out too much, even with the best of care, and even if a very large tub were employed, or a very large earthenware pot sunk in the ground.

A two-year clump, or an older one, might be put into a tub, with provision for good drainage, in the Fall, if the roots should not be disturbed much, with good soil filled in around the clump and this soil washed down in among the roots with plenty of water. Then the tub would better be left outdoors, with leaves or earth heaped up around the sides for a considerable height, so that the plant might pass the Winter in a somewhat natural way. It could be expected then to bloom fairly well upon the porch the following June. It could hardly be expected to give good blooms the second year, even if it were treated very carefully the ensuing Summer. If not allowed to dry out too much the first Summer it could be divided in the Fall and handled as such divisions regularly are handled in field planting.

FRANK B. MEYER

Mild weather coming early in the season portends Peonies in the North for Decoration Day. However, the rather heavy excess of temperature since February 7th may later give us too much cold weather to allow it.

Seasonable Work for May

BY THOMAS SHEWARD

ABOUT middle of this month is best time for setting out bedding plants,—Geraniums, Fuchsias, Coleus, Lobelia, Stocks, Asters, etc.; also young plants of half hardy vegetables,—Marrows, Cucumbers, Melons, Tomatoes, and Egg Plants.

Sow all kinds of half hardy annuals this month, if this was not done in April, as there is yet plenty of time for them to flower. Also sow seeds of perennials, rock-plants, and biennials, for flowering next year. Those sown early in the year in frames, will be ready for planting outside in nursery rows, where many will flower during the Summer.

It is a good time now to propagate double Lychnis by stem cuttings. Divide the flower stalks into lengths, as at 3, and plant these in a shady part of the garden.

Sow Asters, Stocks, Zinnias, etc., for planting in the perennial border, as a succession to early flowering plants.

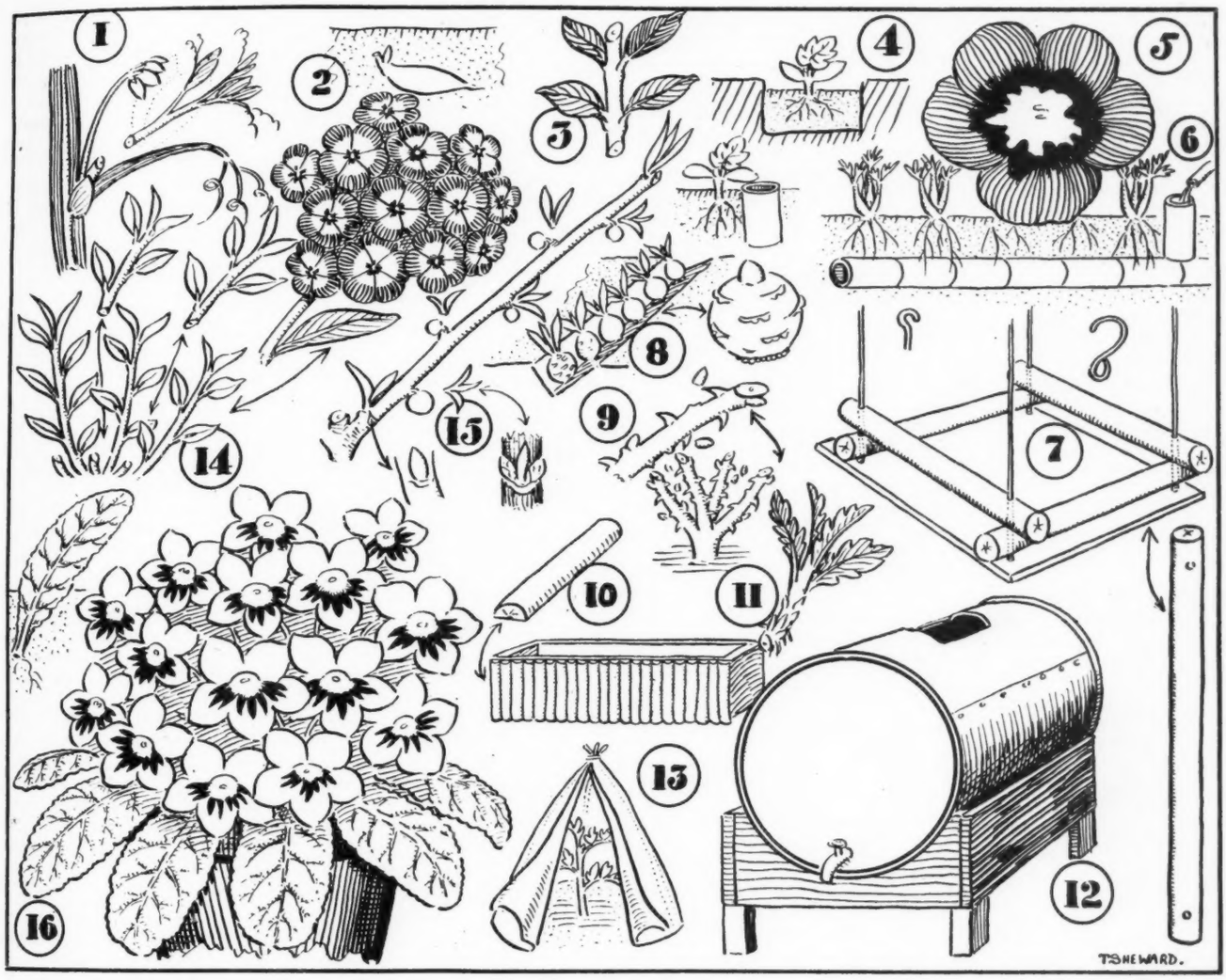
Thin out large clumps of Phlox, Perennial Asters, Shasta Daisies, etc., to the strongest shoots, so that you get large flowers instead of a greater quantity of small ones. 14 shows how this is done.

Clip all evergreens and hedges early this month, before the young growth has made too much headway, using a knife for such things as Laurels, and the shears for Privet.

Now is best time to propagate Violets from runners, to make strong plants for forcing next Winter. To get best results the soil should be well manured, then they will make strong plants by Fall.

Any bulbs that have been forced inside, or are planted in beds that are needed for bedding plants, should be set in shallow trenches to ripen for a few weeks, 8, till the foliage dies away, when they can be cleaned and dried for fall planting.

Disbud Roses this month, 9, to get large flowers. If when pruning in April, six buds were allowed to remain on each piece of new wood, remove three of these with a pen knife, so that those which remain grow stronger, and make much larger flowers.



Root cuttings of Chrysanthemum this month, to make plants for flowering in six inch pots, or for planting on greenhouse benches for cut flowers, 11.

Disbud trained Peaches now, as shown at 15. When pruning in March you shortened back the new wood to about six inches. On strong shoots, nearly all the buds will be in threes,—one wood bud and two flower buds. Rub out all the wood buds with exception of the leader which is to draw

the sap, and one at the base which is to produce new wood this Summer, to replace that which is now bearing, and which is cut out in October.

Sweet Peas which were sown last Fall, or early this Spring under glass, will be flowering early this month, and should have all laterals removed, if long-stalked flowers are required, 1.

About middle of this month will be best time to fill window boxes and hanging baskets.

The rustic window box shown at 10, is easily made, also the rustic hanging basket, 7. A thin piece of wood is used for the bottom, and the sticks are drilled so that the piece of wire joins them at the corners as shown. Moss is used to hold the soil in the baskets.

A very useful manure barrel can be made from a gasoline drum; to hold manure water, soot water, or for mixing liquid fertilizer. A small hole is cut in the side with a chisel and there is already a place for screwing in a one inch tap. The wooden support is easily made.

When planting Marrows or Cucumbers in dry, sandy soil, it is a good plan to make a trench, 4, and to fill this with rich soil, so that they are easily watered. Another way is to set drainpipes near each plant, so that manure water can be given sometimes.

Celery can be irrigated also, as shown at 6.

It is best time now for sowing seed of Incarvillea Delavaii, 5, outside, in boxes. This plant is easily grown from seed, and will flower next year.

Streptocarpus, 16, will now be coming into flower, and should receive some form of plant food; such as weak manure water, or plant fertilizer. They are easily grown from seed, and make good window plants. Leaves root quite easily in wet sand.

Plant main crop Peas for succession, and sow early Peas last week of this month, for late supply.

Sow French Beans, Carrots, Parsnips, Onions, Leeks, Turnips, Lettuce, Beets, Spinach, and Radishes, for succession.

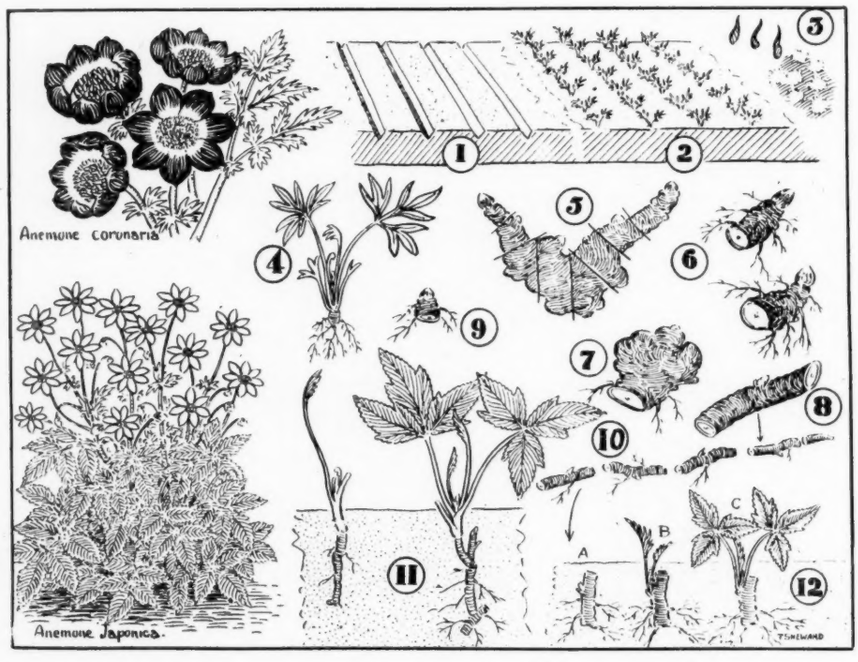
Sow Broccoli, B. Sprouts, Cauliflower, and late Cabbage.

For the window garden next Winter sow Cinerarias, Calceolarias, Christmas Cherries, and Primulas.

The Anemone

BY T. SHEWARD

THE Anemones are a very widely distributed genus of tuberous rooted and bulbous plants; many of the species being popular garden flowers. Some of the best known of these are the Poppy Anemone, (A. Coronaria,) of which the St. Brigid Strain is the best, this being composed of double and semi-double flowers, in a great variety of colors. A good single strain of A. Coronaria, is The Empress strain, the flowers of which are very large, and the colors very fine. Another well known species is A. Fulgens; a strong scarlet with a black center. It flowers very early in the year, and is often grown in pots in the window garden, in the Spring.



Anemone Japonica is a fine hardy perennial species that blooms in Autumn. The two best named sorts of this variety are *Queen Charlot*, pink; and *Honorine Jobert*, white.

Other species, well worth growing in every garden are,—A. alpina, white, tinged with rose, which naturalizes well in woodland, or can be grown in a shady situation in the garden. A. appennina, sky blue, flowers early in Spring, makes a good rock plant. A. Sulphurea is a yellow form of A. appennina. A. glaucifolia is a rare, new plant from Northern China, which grows three feet high, and has very large flowers, of a pale, satiny mauve.

Anemones are propagated by seed; division of the tubers; and by root cuttings; according to the variety.

The seed is covered with a cotton-like down, 3, and can be sown broadcast where they are to flower; or can be sown in drills, 1, and the plants thinned out later, 2. A seedling is shown at 4.

Choice named varieties are propagated by dividing up the tubers to separate eyes, 5, 6, 7, and 9, after flowering.

Anemone Japonica is propagated by division or suckers, early in Spring, 11, or by root-cuttings. Pieces of roots are cut up, each with a joint, 8, and 10, and these are planted as at A, 12, B and C. Dried bulbs are offered in great quantities in most bulb catalogues.

Texas Wildlings

Being exceedingly interested in wildlings, I very often stop on the roadside and bring home some roots of one of my favorites to naturalize. Too frequently they don't survive, as there are many I know only when in flower and transplanting blooming wild flowers—or tame flowers, for that matter—is ticklish business. There are a few, however, that bloom and thrive as if nothing had happened and become firmly established for all time.

The two with which I have been most successful in this particular are Corydalea Texana, a delicately beautiful bulbous plant of the Iris family, with two inch sky-blue flowers; and the Tradescantia. The former has little value as a garden flower as its blooms last only a day, but it is so exquisite I like to give it room. The Tradescantia not only establishes itself; sows seeds and comes up all about; but increases in height, size of flower and number of blooms in its new home. I have counted as many as 69 buds on a single stalk. They also bloom over a much longer period in cultivation, especially if given a shaded location.

We find them in rose, purple, lilac and blue; the purple and blue most frequently.

FLORENCE HARTMAN TOWNSEND, (Tex.)

Eden Regained

When I have finished fighting with the niggard world of trade,
That gives up so reluctantly each penny that I earn;
When I have turned forever from the stupid dress parade
Of those who have no aim in life except to strut and burn;

When I feel the time has come for me to turn and go
Away from all this seething mess of greed and filth and guile;
And endless striving after more, and love of empty show,
And stony-faced indifference to all that is worth while;

Dear God of Nature, let me find a hillside in the sun
Of early Spring, when Dogwoods bloom and Johnny-jump-ups show,
And let me lie, with half closed eyes, and count them, one by one,
And watch the gentle drifting of the Wild Plum's scented snow.

Let me rest my tired head upon the warm, sweet earth
And gaze up where the fleecy clouds of springtime drift away,
And feel the soft caressing of the wind that has its birth
In the misty green of tree tops, at the breaking of the day.

Just let me lie and drink my fill of sight and sound and smell,
And dream, in silent ecstacy, of things that used to be
Ere first I heard ambition's call and made my bow to hell
And drained the cup of bitter brew that Life held out to me.

And let me find a cabin there, of logs and daubed with clay
And roofed with riven boards and with a rick-rack fence of rails;
An ancient homesite, long deserted, moss covered and gray,
With Honeysuckle in the yard, and dim, old, grass-grown trails,

And Wild Rose on the fence-line, where the Redbirds come to nest;
And two or three old orchard trees, where Mocking Birds may sing;
And a weather-beaten chopping block, where I may sit and rest
And view the thousand wonders that the changing seasons bring.

And let there be a little stream, down, just below the hill,
Where Linn and Slippery-elm cast their shadows in a pool,
And I may go, in early morn when everything is still,
And let myself down in its depths, so dim and fresh and cool.

All day long I want to sit and drench my starving soul
With bird songs and the music of the wind among the trees,
And faint, elusive perfume from the wood flower's pallid bowl,
And listen to the droning of the yellow bumblebees.

When sunset's crimson robe is spread and the east is growing dim,
And limbs stand out in bold relief against the glowing west,
Let me catch the liquid silver of the Hermit Thrush's hymn
To the god of day, that now is sinking slowly to his rest.

And when the purple twilight mantles stream and vale and hill,
And Owls come hooting softly through the moonlight's misty glow
Let me hear the music of the mystic Whippoorwill;
The sweet, sad song that wafts me to the land of Long Ago.

Let me draw my bed up close beside the window sill
And drink in all the witchery of Night's enchanting moods,
While crickets sing my sleep song from the weed patch on the hill
And the mellow sound of cowbells floats down through the darkened woods.

I'll ask no wealth nor empty fame nor any worldly thing;
I would not, if I might, take up the broken sword again
And wage the thankless struggle for the baubles it would bring;
Just let me live, and let me die, in this, my lost Eden.

W. A. BRIDWELL

The Glad Philosopher's Musings

ONE May day in one of my rambles I came across a couple of children enjoying a Violet fight. Now I hope the compositor won't change that word Violet to read "violent." It took me back to my own childhood days, when we would go to the woods and meadows and gather great handfuls of Blue Violets which the girls would weave into wreaths and the boys would make "fight" by locking the flower-heads together, and each giving a violent jerk on the stem. But why describe it here? I'll venture you've all played it. Do you remember how you would sometimes get a tough-necked old warrior that would be good for executing a dozen or more of his weaker rivals, until finally his own head would be snapped off by some fresh champion? How like the game of human life! One day a proud and haughty monarch—the next an impotent exile.

The common so-called Blue Violet—which is not blue, but rather light purple, to be more exact—is probably the favorite flower of childhood. It grows in low, moist grounds everywhere, and blooms in great profusion. One of the interesting features that is often overlooked by those who are not keen observers is the small closed flower found growing at the base of the plant. Botanists call these *cleistogamous* flowers. In the case of the Violet these basal florets do not have petals, but bear pollen and have fully developed pistils, so they are capable of self-fertilization in case insects should fail to visit the ornamental flowers. Can it be that Dame Nature foresaw the likelihood that schoolboys might come along and conscript all the eligibles for gladiotorial contests?

The more we study nature the more we are brought to see design in every phase, and so one cannot help wondering if those attractively prominent colored lines that radiate from all directions down into the throat of the Violet flower were not placed there to assist the insects to more easily find their way into the nectar sac, rather than to make the flower ornamental.

Next to the Rose, probably no other flower has been more honored by writers and poets than the charming Violet. It was mentioned by Horace and Virgil, and Shakspeare uses the charms of both the goddesses of beauty and love to pay it worthy tribute. It is said to have been Mahomet's choicest flower and the cultured Athenians deemed it the highest honor to be Violet crowned.

The Violet does not resent domestication, and once planted in suitable locations around the premises will thrive and give a good account of itself.

THE GLAD PHILOSOPHER

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"Wherefore by their fruits ye shall know them."—JESUS

"He who sows the ground with care and diligence acquires a greater stock of religious merit than he could gain by the repetition of ten thousand prayers."—ZOROASTER

Difficulty of Establishing True Variety Values

IT IS decidedly advantageous to the beginner to know what varieties of flowers are most in demand, most dependable; and, as generally expressed, "the best." While it is very desirable to know this, it is not any easy thing to determine. Floral organizations have at times made attempts to standardize, by asking members to vote on varieties, giving their opinions in a percentage scale of points. Several such symposiums or voting ratings have been undertaken within recent years, and while it would be unfair to say that they are a failure, it is altogether fair to say that they do not produce satisfactory and dependable results. Indeed, we might go further and say that they are in many ways misleading. Well known varieties of outstanding merit, when they become cheap and plentiful, are usually rated too low. Others, when new and comparatively untried, are rated too high, and without any good reason.

Most flower lovers, in common with people in other walks of life, are governed by prejudice, sympathy and mere whim; and not by analysis, calm reflection and candid judgment. Their likes and dislikes are too strong to give proper judgment in the rating of varieties.

A rating established by one person, qualified to judge, is far better than can be established by many persons by filling out a blank which is sent them for that purpose. Under the latter plan those least qualified to judge, make up the majority sending in returns; and the result, as might be expected, is altogether unsatisfactory; and, in many cases and many ways, quite misleading.

The rarity and novelty of a variety which has been recently introduced is more than likely to cause it to be given a comparatively high rating; and the older and better established varieties, no matter how high their real merit, are rated low because they are so common. Specific cases could easily be pointed out.

What is written here is not to discourage the conducting of rating symposiums, or votings to establish ratings, but to point out the inadequacies of the method. Even though a committee of experts is selected, the same human factors make the establishing of ratings more or less unsatisfactory.

MADISON COOPER

The Secret of Success

Prof. Van Meter in this department this month, under the heading, "The Secret of the Plant Wizard," tells in very direct and convincing language what the secret consists of. But it is no secret;—success with plants means application and study; and this does not mean simply putting in a given amount of time each day; but a real desire to "get in step" with the subject. When we work with plants we work with living things, and this thought is not given proper weight by some who think they understand. As pointed out by Prof. Van Meter, living plants tell their own story and we may read this story by a correct attitude of mind and a correct application of our own intelligence.

Man, as an individual, is given the secrets of nature only as he is willing and able to put himself in a position to receive those secrets; and the putting of oneself "*in a position*," means, first of all, a love of the work. No mere dabbler who adopts the idea of "let George do it," or who thinks he can "hire some good man" to look after it for him, ever accomplished anything worth while in plant research or in any of the other problems of nature requiring individual sympathy and sympathetic understanding.

This subject verges so closely on the religious, that it is worth while to point out that the successful plant breeder and plant investigator is, whether he knows it or not, doubtless in every case a religious man.

What is written here is only to call attention to the subject in its true light, as the Editor sees it, and is not intended as any considerable discussion of the problem.

MADISON COOPER

The Secret of the Plant Wizard

THE ability to commune with plants marks the true horticulturist. The rules and formulae which we promulgate are necessary and useful; but most of them are, at best, rough approximations which may be true on the average, but seldom fit exactly the individual plants and the particular conditions with which the farmer and the gardener have to deal. The progress of the horticulturist from amateur to adept is marked by the development of a sense of fine discrimination which enables him to adjust cultivation and fertilization, and pruning and spraying, more and more closely to the needs of the individual plant.

This bond of sympathetic understanding can be established only by study and practice, and the careful observation of details. That study is of first importance which adds to the equipment of the man who works with plants the summarized experience of thousands of other plant manipulators who have gone before. But that is only a mine of ideas in the rough. Language cannot convey a real understanding. Each crude nugget must be smelted and refined again and again by experience and observation and comparison, until gradually there dawns a sense of relative values, a comprehension of the meaning of subtle changes which follow our attempts to bend the plant to our purposes. Then a tree is no longer merely a tree; it is a community of interdependent leaves and twigs and spurs and buds; each performing its part of the work of the whole to the best of its ability, in the conditions fixed by its environment; and each to be scrutinized carefully in judging the results of modifications in that environment; such as pruning and fertilization. There is no sulking by plants; no meanness; no days of disgruntled

misbehavior; no chances lost through indifference or neglect; for plants have no psychology as the term is applied in the animal world. They respond directly to the treatment given them.

Understanding can never be complete for the human senses are far too limited and plant reactions too intimate and subtle for that. But the degree of mastery makes the difference between the "plant wizard" and the man who, in exasperation, has no "luck" at all with plants.

Study the plant! Learn to know it at its best; then learn to recognize the signs of trouble, especially those delicate but apparent growths and color changes which accompany a low or poorly balanced food supply, for malnutrition is the worst foe of cultivated plants.

Have you pruned your Roses properly? Ask the plants. Have you sprayed your Apple tree enough? Have you furnished the right amount of plant food, by cultivation, or fertilization to your favorite flower? Go to the plant. Your answer is there and the completeness and adequacy of that answer depends solely upon your ability to comprehend the mute appeal of a sensitive, expressive, living thing.

R. A. VAN METER

Capital Letters in Plant Names

Despite my fellow botanists, I believe that Rosa Carolina is better than Rosa carolina.

Why not use the capital letter to show that it is a geographical name? It conveys some information to the layman. Why not give him all we can if it takes no additional space?

Malus ioensis is lost but Ioensis might make an Iowan suspect his state was meant. Chinensis and sinensis both mean from China; so why not say so with a capital letter?

Latinized forms pull away from English construction. Thousands of examples could be shown;—javanensis conveys nothing to the masses but Javenensis suggests a proper name by reason of its capitalized *rank* above common words.

The scientist is cold blooded;—thinks of nothing but science. Let us be human.

ERNEST BRAUNTON

Botanical Names

REFERENCE is made to the discussion found on page 103 of the March FLOWER GROWER in which Mr. Ralph W. Shreve and the Editor, Mr. Madison Cooper, have some argument about botanical names. Neither party to the discussion, mentioned the recent book, "Standardized Plant Names," published by the American Association of Nurserymen, with considerable help from other sources. As a matter of fact, this handbook is the one thing which a practical horticulturalist or nurseryman cannot overlook. It gives the standard Latin names and also the standard "common" names. The spelling and capitalization are also accurately given. It is the one reliable guide for practical men.

Even the botanists have cordially endorsed this work, and indeed some of the most distinguished botanists in the United States assisted in preparing the material.

May I suggest, therefore, to the Editor of THE FLOWER GROWER that this recognized standard work be made the authority for the magazine? It is a simple matter to adopt these recognized botanical and common names for use in print; and the use of such a standard does away with the conflicts and ambiguities which are otherwise inevitable.

I hope THE FLOWER GROWER will adopt and follow this standard, as I think every nurseryman and practical horticulturist should do.

FRANK A. WAUGH

EDITOR'S NOTE:

Yes, "Standardized Plant Names" is certainly a meritorious work and should be used wherever possible, but this book was printed almost solely, and at least chiefly, to standardize the names and not the question of capitalization. And the points under discussion in the article referred to by Prof. Waugh had nothing to do with the standardizing of names themselves, but only with reference to capitalizing.

In connection with capitalizing note what Ernest Braunton has to say under title, "Capital Letters in Plant Names," in this department this month. The Editor stands with Brother Braunton absolutely. Why should a proper name be humiliated by using lower case letters just because it is a part of a compound name? And besides Braunton gives a good reason why the capitals should be used.

The Subconscious Mind

FEW people have much of a conception of what is meant by the subconscious mind and the Editor will admit that he is one of them; but that there is such a thing as a subconscious mind and that it is constantly operative, and that it does much to control the affairs of men, there is little doubt. There is room for much study and thought along this line. L. W. Lighty, in another column, says that the subconscious mind is the seat of perfect memory and indicates that when properly used it is a safe guide. Therefore, don't dispose of the subconscious mind summarily but give it a bit of thought and see what you can figure out of it.

Many people do not want to hear about anything nor will they think about anything that they cannot figure out by mathematics, or prove by statistics, or explain scientifically. But we will all admit that there are many influences at work in this world which are not published in the daily papers and which cannot be explained by the ordinary processes of reasoning with which we are familiar.

Because we do not know just what the subconscious mind is, and how it operates, is no reason why we should reject the thought that there is such a thing. This is one of the things that the Editor has in his trial grounds, and if as satisfactory results are had twenty years from now as were produced in case of the divining rod, which was put in his trial grounds twenty years ago, he will be satisfied.

Just Living

Green is the grass, the trees are green,
The azure sparkles blue between,
Into the Tulip's flaming cup
The sun pours down his golden sheen.

The Robin and the Bluebird sing,
With vibrant air the marshes ring;—
Who would not quaff the wine of life
When proffered by so-joyous Spring?

GEO. W. BORDEN

The Subconscious Mind and the Divining Rod

MAN'S conscious mind reasons and the reasoning mind very naturally condemns the Peach crotch or Divining Rod for finding water. It is childish superstition on the Santa Claus order to the mind that reasons, hence the hoots at the person who professes to locate underground streams by the use of some device. Man has a subconscious mind. It is the subconscious mind that builds and cares for his body as long as he lives. It is this part of the man's mind that keeps the heart going, the lungs expanding and contracting, the digestive tract in motion and in fact it is the ultimate basis of all man's actions. It is this part of man's mind that gives him perception or vision. The sense or conscious mind may see but it does not perceive. "They have eyes but they perceive not." Henry Ford perceived, had a vision of the "flivver" before he built the first "gas-wagon" and the first one was far from the one he perceived because of the crudeness of his conscious working mind. But he persisted until he came nearly enough to what he saw in his "mind's eye," that his fellow men shoveled into his coffers, billions of dollars as a reward for realizing to a great extent his perception or vision of his subconscious mind.

The conscious mind acts along the lines of reason. The subconscious mind acts along the lines of belief. The subconscious mind is the seat of perfect memory and there memory builds belief. First impressions constitute belief.

There is a child of say seven, and all its knowledge of getting water is to open the faucet. The parents take it along to the hills for a week end and there the water is dipped from a flowing spring. There the water flows out of the earth in a stream. Inquiry comes to the child's mind. Just now comes a man, a stranger, walking along the hillside with a queer stick in his hands, going back and forth and in circles and retraces his steps over again. The child does the very unusual thing and runs over to the stranger and watches and inquires with eyes and actions and possibly words. The man with the stick takes kindly to the child and tells it there are streams of water underground, and he wants to dig a well here by the hillside and he is hunting the place where the best stream is, to locate this well. This stick held just so will locate the stream, and by certain actions he can tell how deep he has to dig to strike the stream. There you have a first impression which results in belief and ever thereafter that child can locate water by that method.

However, we have imagined the unusual to happen. Suppose the usual would happen. The father was not far away and the child would run to the father and say: "Dad, see that man over yonder walking around so funny, what is he doing?" The father would look and see what the man was up to and would reply—"Alpheus, that man has 'bats in his belfry', there is something loose in his head; he is like Bill Mulligan who goes down street often wriggling his hands and talking to himself; he is a bit crazy." Again a first impression and a belief, and that boy all the rest of his life will be utterly unable to locate water and is fully convinced that the man who pretends to so locate water has "bats in his belfry."

In the first case the subconscious mind acts on the stick as it acts on the heart, and down goes the stick to the flowing stream of water. "All things are possible to him who believeth" was first spoken by a man now worshipped by a large fraction of the human race, but the very great majority refuse to believe these words; yet I have proof in abundance that these words are indeed true.

I personally know a man, F. W. Schenk, a native of Switzerland, but now of Mansfield, Ohio, who never fails in locating water and he gets the depth by getting the angle with the crotch and the direction of the stream with pins stuck in the crotch. His perception is wonderful in this line and he marvels at folks on the farms suffering for want of water when great streams flow beneath their feet. In exactly the same way he has control of fire when it endangers life or property. He can extinguish a small fire in the same way he locates water—*by believing he can.*

Today we know very little of the subconscious mind and its function and possibilities; but when man knows, he will indeed exercise dominion over all things on the earth, in the earth, and in the air above the earth.

L. W. LIGHTY

What is Instinct?

GREEVES Carpenter, in his article on Tent Caterpillars on another page in this issue, suggests that they *"seem to be imbued with the instinct of community welfare."* Many things are unexplainable by ordinary processes of human intelligence; and the so-called *instinct* of Caterpillars, Bees, and other forms of insect life, animal life, or other life; is quite incomprehensible when placed in the light of human mental analysis.

When we thus run up against a blank wall, and can go no further, we are inclined to adopt some phrase or term to explain our failure to comprehend the cause and as in case of the guiding intelligence which controls the Tent Caterpillar, we call it instinct. Instinct, as a word, doesn't mean much to the human mind, no more than electricity means much to the electrician. The electrician knows what electricity will do and how (to an extent,) to control its action; but so far as knowing what it is and its true relation to the universe, he is as much in the dark as the average person is on the subject of instinct as applied to the lower intelligences.

But there is no reason why we should be satisfied to stop at a blank wall and saying we cannot go beyond. We *CAN* go beyond and we *WILL* go beyond. But it cannot be done by a so-called scientific analysis or mental calculations. We must do it by utilizing that same instinct which we know to be unexplainable otherwise. Some of our human instincts will tell us many things if we will but allow them to do so. We stress too heavily the material and mental; and not enough the instinctive, intuitional, and inspirational.

The Editor dare not go much further along this line for fear he will get so far into deep water that he will need to send out an S. O. S. But we can think about it, can't we? And by thinking about it we may get a better idea of our own faculties as well as of that instinct which guides the Tent Caterpillar in the construction of its nest.

MADISON COOPER

A reader of THE FLOWER GROWER suggests a write-up of the handling of woodlot and timber, and the care of forest products of all classes; from the growing of seedlings to the marketing of the finished product. Here is surely an important subject and one with sufficient scope to enable most anyone interested to cover some part of it. Any reader of THE FLOWER GROWER who is interested along this line, and can tell even a short story, will be welcome to the columns of THE FLOWER GROWER.

The Art of Water Divining

AN ARTICLE under this title on another page of THE FLOWER GROWER this month brings up a subject which some people will look at askance and with suspicion; and it is much for this reason that it is being printed in this magazine,—just to give my readers something to think about, which they are not likely to find elsewhere.

The so-called divining rod has been known for many years and when the Editor was a boy he remembers it having been mentioned, although he cannot recall that it was ever used in his neighborhood. Later a discussion ran through many numbers of *The Rural New Yorker* and many letters were printed, some as evidence that the divining rod would do all that was claimed for it, and others criticising the idea and telling about failures.

In this connection, as in all other things, it must be remembered that there are crooks and fakers abroad. No matter how much virtue there is in anything, it will attract those of dubious principles and these spurious ones will debase the subject as far as their influence goes. But any man of well-balanced judgment need not allow the evidence made by such people to influence his deductions.

Thomas Sheward, who writes the article in question, a part of which information was furnished by Mr. Bywell, the well driller and water diviner, states in a letter to the Editor:

> "I might say I did not believe in water divining until speaking with Bywell one day and he made "a rod" for me to try. Then he asked me to walk in direction of a spring he had just located, and believe me, I could not keep that stick from turning round. Since then I have tried it with a great number of people and with few exceptions with the same results."

Herbert W. Collingwood, Editor of *The Rural New Yorker,* perhaps the most influential farm paper in the world, referred to above, during recent correspondence with the Editor of this magazine, has the following to say on this subject:

> "As for this matter of the divining rod, I personally have a great deal of faith in it. I have seen it give results. At the same time, I realize that scientific men all ridicule the proposition and make light of it. I cannot explain to you how or why the rod acts, but knowing very well that it does act on occasion, I do not join the chorus of ridicule which all so-called educated people let out when this subject is mentioned."

In addition to the above read what L. W. Lighty has to say on this subject in another column of this department this month, entitled, "The Subconscious Mind and the Divining Rod."

It would be difficult indeed to locate two men who are more experienced generally, and more practical and "hard-headed," than Collingwood and Lighty, and their evidence is valuable in proportion.

So much for evidence on this subject. The Editor of this magazine advises readers to accept the divining rod under test; "put it in your trial grounds." That is exactly what the Editor did years ago when the subject was first covered in *The Rural New Yorker;* and now after the passing of time he is willing to accept the divining rod as a demonstrated fact; even though he has never tried it himself, nor has he ever seen it tried by others. He accepts it on the evidence presented.

MADISON COOPER

What is Aura?

NOTE what is said in the article entitled "Practical Water Divining" under the sub-heading "The Aura."

Aura, to most of us, means nothing. We may even think when we hear the word that it means some mystical or mythical thing which cannot be comprehended by us. But look in the dictionary. One of the definitions is; "an effluvium, emanation, or exhalation, as the aroma of flowers." Flower lovers will take more interest in this subject because flowers are particularly mentioned in the definition. If the aura of flowers consists of a perfume, which may be perceived by the outstanding or conscious senses of a human being; is it not possible that substances that do not exhale perfume still have an aura which may be noticeable by a proper application of the proper senses?

The newly discovered metal, radium, has an aura which is not explainable, but which is nonetheless a fact; and recognized as such. It is probable that every substance has an aura and it is well known that animals and persons have this quality.

But what is written here is only to call attention to aura in connection with the use of the divining rod, as explained. The subconscious mind senses the aura of water and of metals where the conscious mind cannot perceive it;—hence the divining rod operates in the hands of those who allow their subconscious mind to function.

Put aura in your trial grounds for further observation.

MADISON COOPER

Don't Stay "Puzzled"

People write me from time to time that they are puzzled over this, that and the other thing. They seem to be in distress, and expect good advice, sympathy, etc.

Well, here is the good advice in blanket form: Don't puzzle too long over anything. And don't blow up or get off the track because you can't figure out everything to fourteen decimal places. These things are all taken care of for us in a way which is far better than anything we mortals can figure out.

If problems present themselves which look insurmountable or unsolvable, it is a safe thing, generally speaking, to forget it and take up something that looks more promising. This won't apply to everything, and people do actually have problems which are of great importance to them, which seemingly at least cannot be solved. But, as Elbert Hubbard says, "the most of our troubles never happen."

Moral: Don't harbor imaginary trouble.

—EDITOR

French-Canadian Spring Song

The Editor of this magazine is the son of a French-Canadian mother. One of his earliest recollections is a song, which translated rather crudely, runs somewhat as follows:

> Little flower of the woodland
> I love thee, how I love thee.

Can any of my French-Canadian readers give me the whole song, and with or without music, and necessarily in English, as the Editor is not a French student, even though he is of French extraction?

If the balance of the song is as good poetry as the two lines which the Editor remembers it is surely worthy of an important place in literature.

The Art of Water Divining

BY THOMAS SHEWARD

THE Divining Rod has been used for locating water from the remotest period. It was used by the Greeks, Egyptians, Romans, and all the European nations. In the middle ages it was used for discovering hidden treasure, veins of precious metals, springs of water, thefts, and murders.

The above illustration is redrawn from an old woodcut, published in 1557, and is the earliest known illustration of the Divining Rod, showing how it was used to find precious metals.

At top a man is shown cutting the rod from a tree; two "Dowsers" are shown locating; miners examining the metal dug up; and two onlookers are pointing to the metals found. (From Agricola's treatise on Mining, published in 1557.)

One curious way of divining for thefts was to place a key inside a Bible, and then to tie it as illustrated. The person who caused the key to turn when he held it, was judged guilty.

In many European countries miners carried the Divining Rod as part of their equipment. It was known by many names, some of these were:—Divining Rod, Shining Rod, Leaping Rod, Transcending Rod, Trembling Rod, Dipping Rod, Superior Rod, and the Willow Wand.

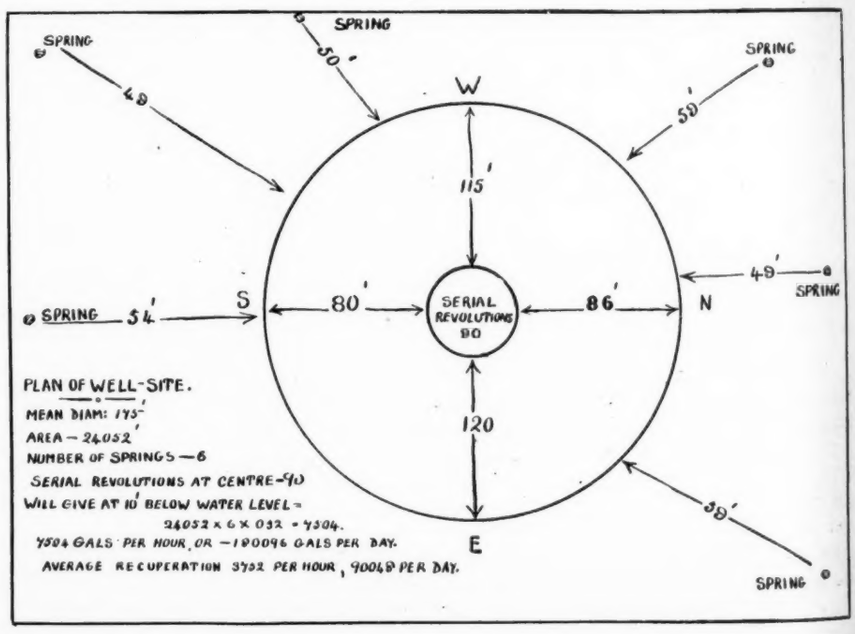
The Rod was made and used in several ways, some of which I have illustrated. The material used was Hazel, Willow, or Osier wood. Some diviners used any kind of wood to make their rods. Some of these rods were made to rotate in the hands of the diviner when held over springs of water, others dipped or twisted.

The old diviners did not understand why the rod rotated, but in this way the modern diviner calculates the depth of the spring,—by the revolutions of the metal rods, or "pointers." Experiments by a famous modern diviner showed that these revolutions also indicated different minerals. For instance, a "pointer" held in same way as the "rod" will give five revolutions, in serials, for copper, and four for tin.

This phenomenon confounded many clever men, during the middle ages; and many who started out to prove the rod to be a fraud, ended by becoming firm believers in its powers. Old books on myths of the Middle Ages are full of accounts of these experiments, and make very interesting reading. Books published during the 17th Century, give careful directions for making the Divining Rod, and using it.

Water divining was practiced all over England during the 18th Century, and even then was regarded with suspicion; and the water diviner was supposed to be "gifted," to be able to use the Divining Rod. The Diviner was always in demand, for no one was going to risk digging a well, perhaps 200 feet deep, or more, on chance of getting water, when, by paying the Diviner his fee, he would mark the exact spot, and they would be certain to get it. The profession of water divining was kept in the family of the Diviner, sometimes for many generations; and the secret carefully guarded.

About twenty-five years ago, experiments were began by a famous Diviner, in India, and he discovered that certain persons were sensitive to unknown electronic vibrations, which emanate from various minerals, and water. And he also discovered that the rod was not an important factor at all. It could be made from wood, iron, bone, or bamboo; or the hands alone could be used without the rod, and be just as effective. He made



an iron "Pointer," which was so constructed that when held in the hands, in much the same way as the Divining Rod, it would point out the direction of the nearest water, perhaps half a mile away. He also found by experiment how deep the water was from the surface, and if fresh or salt. Also was able to locate various metals, and many technical details, only interesting to professional Diviners.

The modern Diviner uses one of these "Pointers" or an electrical machine, but the machine is expensive, and is often getting out of order. For the general reader who wishes to try out the Divining Rod, the following article, by A. Bywell, of Victoria, B. C., a professional water driller, and Diviner, will be interesting.

Practical Water Divining

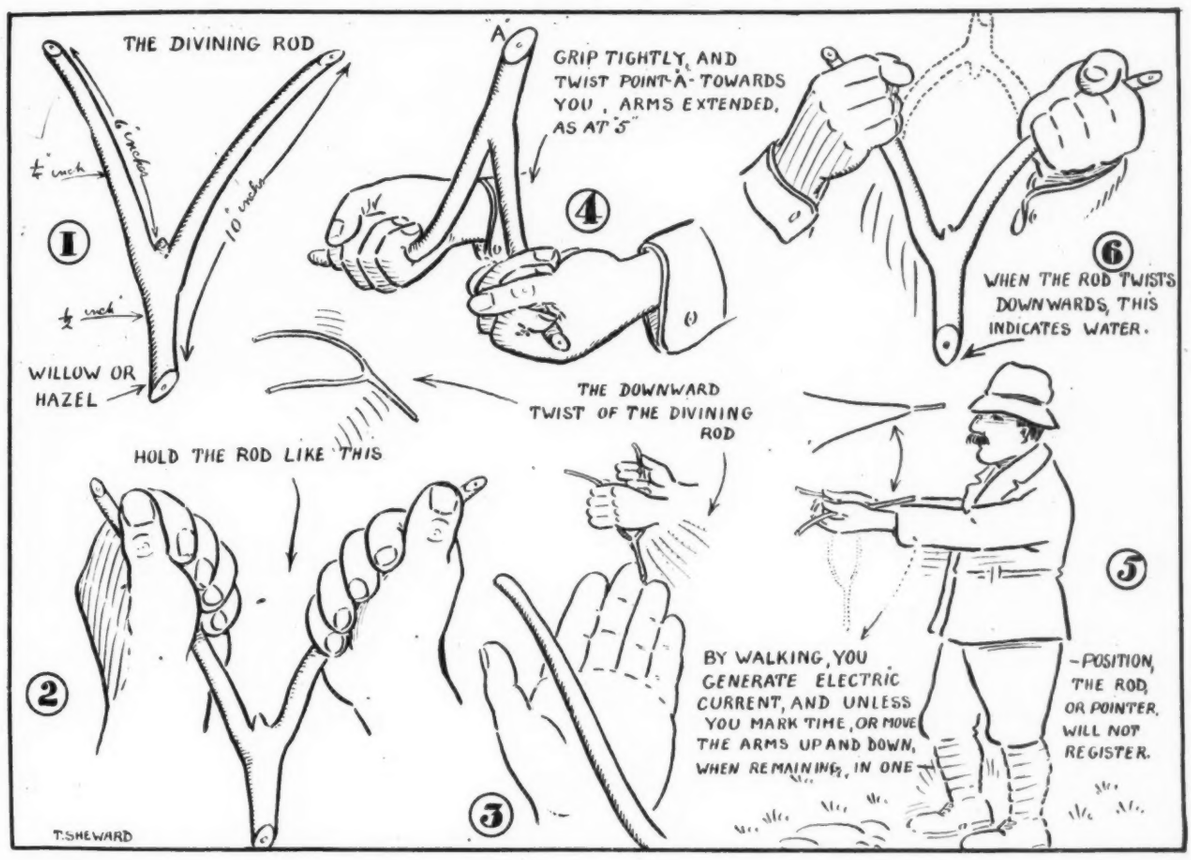
BY A. BYWELL, (B. C.)

WHILST the art of divining water has been practiced for a great number of years, a large percentage of people are very skeptical about the Divining Rod as a means of indicating water. Years ago it was supposed that only a few people, who were specially gifted, could divine a living spring. As a matter of fact, at least fifty per cent, (also including those who are unbelievers) possess the gift, and with a little practice can undoubtedly locate a living spring, either in rock or alluvial deposits.

The oldest and most common method of divining was by means of a forked stick, as illustrated at 1. Cut a "Y" shaped rod, same as shown at 1, Willow by preference. Hold this as shown at 2, and 3. Grip tightly, and extend the arms as shown at 5, the point of the stick held straight towards you, then begin to walk towards the site where you wish to locate water. By walking you generate electric current, and unless you mark time, or move the arms up and down, when remaining in one position, the rod will not register.

When passing over a spring the rod will dip down as at 6, and, no matter how tight you hold it, will dip downwards. It will be often found that the rod will indicate perhaps five or six different places all within a few feet of each other. That means that there are several different springs all close together. But this does not say you will get water from all of them;—it depends on the formation. If in clay you must mark exact spot, for a well might be drilled a few feet from a spring, and you would only get the amount that drained through, where as by drilling exactly over it, you get an abundant supply.

If several springs are located all together, mark them all and chose the strongest, or nearest to the place you want your well. In a case like this the professional diviner can tell from the dip of the formation, just where to place the stake, which locates the site for a well, so that they all drain to it. To mark exact site of a spring you place two lines of stakes in opposite directions, and the point they cross is where you mark the well site.


THE DIVINING ROD
6 inches
10 inches
½ inch
½ inch
1
WILLOW OR HAZEL
GRIP TIGHTLY, AND TWIST POINT A TOWARDS YOU, ARMS EXTENDED, AS AT 5
4
6
WHEN THE ROD TWISTS DOWNWARDS, THIS INDICATES WATER.
THE DOWNWARD TWIST OF THE DIVINING ROD
HOLD THE ROD LIKE THIS
2
3
5
BY WALKING, YOU GENERATE ELECTRIC CURRENT, AND UNLESS YOU MARK TIME, OR MOVE THE ARMS UP AND DOWN, WHEN REMAINING IN ONE POSITION, THE ROD OR POINTER, WILL NOT REGISTER.
T. SHEWARD

SCIENTIFIC EXPLANATION OF THE DIVINING ROD

FOR centuries the Divining Rod puzzled scientific investigators, and philosophers, and many theories were advanced to account for the mysterious movements of the Hazel twig, held over water or minerals. But if the investigators had dispensed with the rod, and examined the "sensitive" instead, the mystery would have been solved long ago.

About twenty-five years ago, experiments were started by a famous diviner, to evolve a scientific explanation for the phenomenon, and this is briefly what he discovered:

That a large number of persons were sensitive to unknown electronic vibrations, emanating from minerals and other substances. For instance: It was discovered that a "sensitive" standing without movement, had no effect on the rod. If the sensitive walked, or moved the arms up and down, electric current was generated, and the left hand was negative, and the right positive.

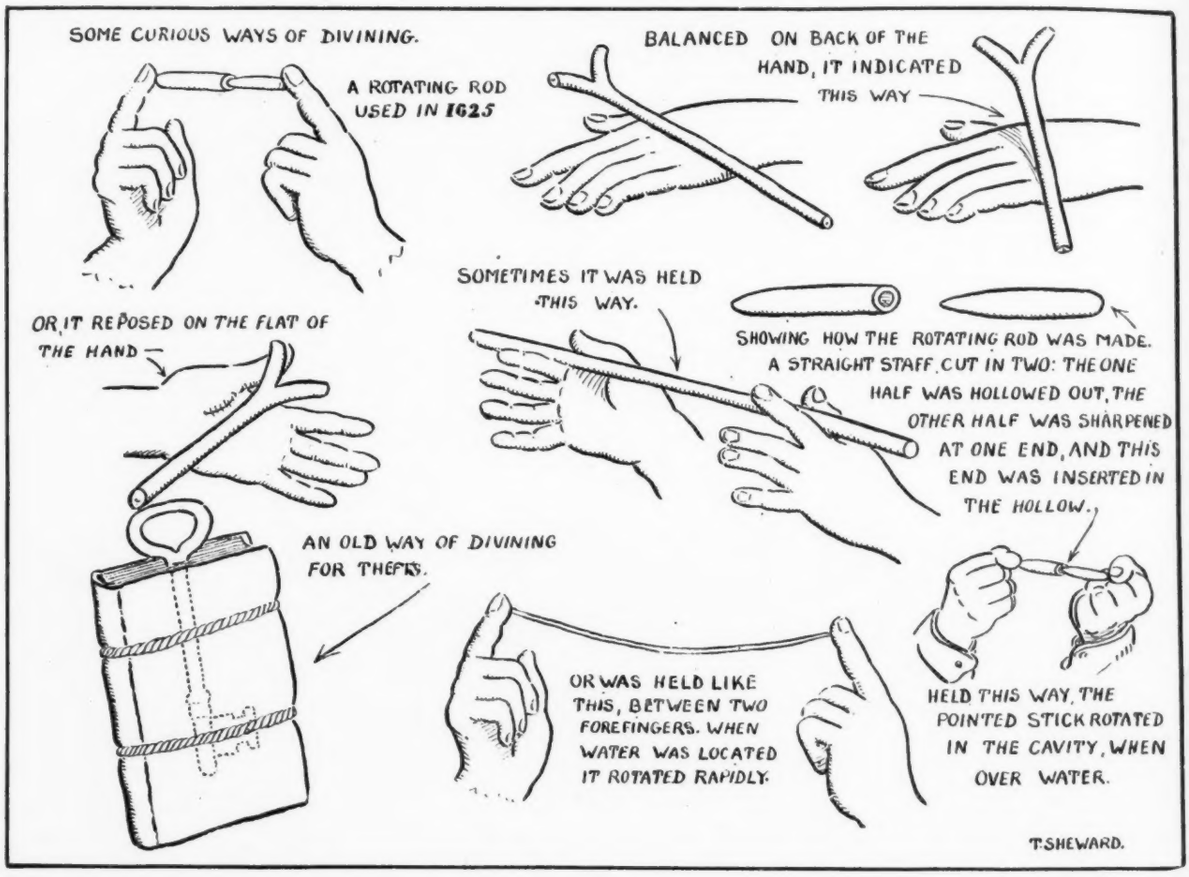
water, which in one experiment was three and a half miles away.

THE "AURA"

IT WAS also discovered that every substance, metal, trees, water, and practically everything was surrounded by "gamma radiations," which for the reason that there was no other name to give it, was called "aura." These radiations are much same as radium, and radium seems to be

copper, positive 5. When the motorscope was pointed over the "aura" of any substance, and held horizontally, it rotated several times, each substance giving a certain number of revolutions. For copper it rotated five times, then a pause, and another five revolutions. For silver it rotated 2, kerosene oil 2, sulphur 1.

The "aura" of any substance can be examined by a motorscope, and its


SOME CURIOUS WAYS OF DIVINING.
A ROTATING ROD USED IN 1625
BALANCED ON BACK OF THE HAND, IT INDICATED THIS WAY
SOMETIMES IT WAS HELD THIS WAY.
OR IT REPOSED ON THE FLAT OF THE HAND
SHOWING HOW THE ROTATING ROD WAS MADE. A STRAIGHT STAFF CUT IN TWO: THE ONE HALF WAS HOLLOWED OUT, THE OTHER HALF WAS SHARPENED AT ONE END, AND THIS END WAS INSERTED IN THE HOLLOW.
AN OLD WAY OF DIVINING FOR THEFTS.
OR WAS HELD LIKE THIS, BETWEEN TWO FOREFINGERS. WHEN WATER WAS LOCATED IT ROTATED RAPIDLY.
HELD THIS WAY, THE POINTED STICK ROTATED IN THE CAVITY, WHEN OVER WATER.
T. SHEWARD.

It was discovered that if the arms were fully extended, as in the diagram, and moved up and down, a change was made, from constant negative, or positive, to alternating. If the arms were bent at the elbows and held with thumbs close together, it was discovered that the right hand was negative, left hand positive. On a step being taken forward or backward, this changed to right hand positive, left hand negative. One more step forward, and it changed again, right hand negative, left hand positive.

After a great number of experiments, which would be of no interest to the general reader, sometimes with two "sensitives," an iron "motorscope" was made, with a pointer welded on from one-sixteenth inch iron wire. This was a great improvement on the Divining Rod, for, by means of the pointer, it was possible to point out the exact position of the nearest

the only substance that absorbs "aura." Very little is shown about "aura," but it can be pumped into test tubes, and keeps its strength for over a year. The "aura" of two different minerals will not mix in a test tube.

If a substance is placed in one position for twenty minutes, then removed, its "aura" will remain for some time afterwards, and give the specific revolutions for the substance when tested by the motorscope. If a cloth is slowly dragged through the "aura" of any substance, part of the "aura" will become attached to the cloth, and give the specific revolutions of the substance. "Aura" can be conducted along copper wire, very slowly, about one foot per minute.

Experiments show that if a piece of silver was placed at one end of a copper wire, the silver would lose its own "aura," which tests negative 2, with the motorscope, and test for

revolutions calculated. Several metals in a substance can have their "aura" tested separately, by their specific revolutions, and the diviner will know of what it is composed. This is determined by the "differentiating test," same as is used when he wishes to discover if water is salt or fresh, or if the minerals under ground are one of many, each giving same number of specific revolutions.

HOW THE DIVINER USES THE MOTORSCOPE TO LOCATE A SPRING

THE motorscope is held vertically in the hands, and the diviner moves his arms slowly up and down. The pointer of the motorscope swings in the direction of the nearest water. If there are several springs close together, it locates the greatest supply first. He follows the direction indicated, till the point of the motorscope swings back, indicating that he has passed over the site of the spring.

He marks the spot with a stake, and returns till the pointer swings back, indicating the extent of the "aura." He stakes this, then crosses at right angles, and tests the extent same way. Where the two lines of the stakes cross, is the exact location of the spring.

Another way is to hold the pointer horizontally, elbows bent, and the pointer will dip over the exact spot. (The elbows are bent to get the rotary movement of the motorscope, for taking specific revolutions)

To determine the depth of the water from the surface, he holds the pointer horizontally over the site, elbows bent and it gives specific revolutions for water. By counting the pauses between the revolutions, the diviner gets his depths; allowing one-fifth deduction for the capillarity attraction of water. If the rod read twenty pauses between the revolutions, and these were in serials of five the indications are for copper, at twenty feet below surface. Next he tests if the water is fresh, by the differentiating test.

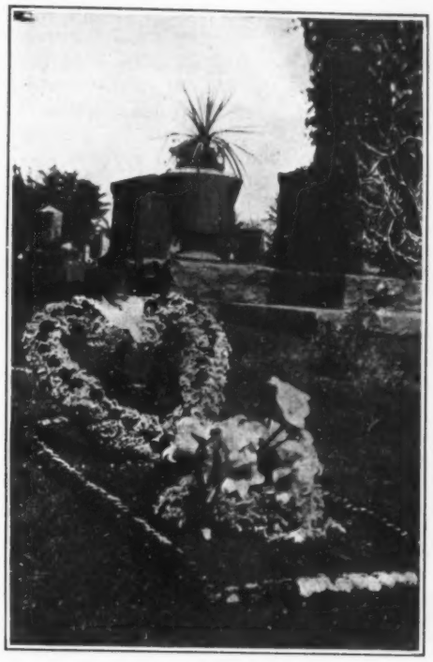
To tell the quantity of water a spring is likely to yield per day, or hour, he marks out the extent of the "aura" of all the springs, and from known quantities of "aura," to quantity of water, can calculate very closely the quantity likely to be obtained. Also he can tell the direction of underground springs, and follow them up with the motorscope.

Everlasting Flowers for Memorial Day

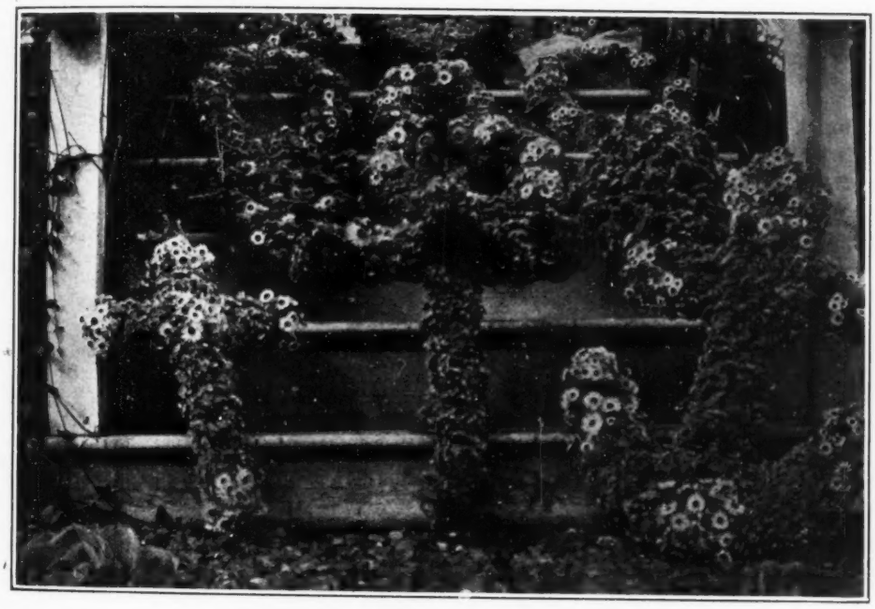
BY LENA CAROLYN AHLERS, (Ill.)

THOSE who live in the more Northern states often find that Memorial Day comes and there are no flowers in bloom in their gardens or in those of their neighbors. There is in fact, more often a dearth of flowers on Memorial day in the Northern and Central States than there is a plenty of flowers, and few people can afford to order many from the hothouse. Yet there is scarcely a household anywhere without one or more graves to decorate. The graves can be made to look beautiful if one has an abundance of Peonies, Snowballs, and Iris with which to decorate; but when we cannot do that, fortunate indeed are those who have a goodly supply of everlasting flowers stored away for this purpose.

Most of the Everlasting flowers are so easily grown that anyone may have a patch in the garden. The flowers are easily picked, dried, stored, and kept till Memorial Day. If one does not care to use the flowers for wreaths and other pieces, a simple bouquet is always a pretty decoration; and, of our own growing, are far more weighted with love than any hothouse flowers costing much more could be. The most beautiful and elaborate wreaths and other fancy pieces are readily enough made from these Everlasting flowers; given a little time, a little patience, and a few supplies. The foundations used in making the wreaths, crosses and other pieces may be obtained from any florist at a moderate price. Some of the more simple pieces may be formed by nearly anyone from tinfoil, wire and bits of wood. Any old foundations, that have previously been used at funerals, and for other decorative purposes, are usually all right to use again. The flowers are fastened to these frames with light wire, cord or thread, and should always be so arranged that the colors will blend appropriately.



Some of the Everlasting pieces on the grave



Frames covered with Everlasting Flowers

A bed of Everlasting Flowers in a garden

OF THE Everlasting flowers good for decorative purposes none are more satisfactory and beautiful than Acroclinium, which bears lovely white and rosy pink flowers. It is not only valuable as an Everlasting, but is splendid to grow in the mixed border. The flower heads should be picked just

as they start to expand, and hung heads downward in a shady place to dry. After the flowers are thoroughly dried they can be stored away in boxes or put in vases.

The seeds should be soaked before planting and the hard cottony covering removed. The seed germinates in ten days and should not be planted till in June. The flowers do best in a light, loamy soil. If the seed is planted in pots in August, the plants make useful decorative plants for Winter. The plant itself grows about fifteen inches in height.

Agrostis Nebulosa, more familiarly called Clud Grass, is an airy, graceful plant growing eighteen inches tall and looking like a fine mist when in bloom. It is a hardy annual and is one of the best of the Everlasting and ornamental flowers, being fine for decorative work; as the flowers keep indefinitely and the stems do not break easily.

Ammobium, or Winged Everlasting, has beautiful silvery white flowers with yellow disks that are fine to use in connection with Acroclinium. They are hardy annuals growing about two feet in height, and the seed should be started in the house and transplanted outside when the ground is warm. The seeds take ten days to germinate and the plants prefer light soil.

The seeds of Avena, or Sterilis, should also be started in the house and later transplanted out of doors. The dried leaves and flowers of this plant last all Winter without fading.

NONE of the Everlasting grasses are better for Memorial Day work than Breezia Maxima, better known as Quaker Grass. It is fine to use as a background for the flowers and to cover bare spots in the frames, just as Ferns are used with other flowers.

The feathery panicles of Eragrostis Elegans, called Love Grass, are also splendid for this purpose.

Erianthus is a tender ornamental grass growing thirty inches in height, and when properly dried will retain its beauty for years. The seeds of this plant should be started in the house and later transplanted outside.

Eulalia is a hardy perennial grass growing six to eight feet tall, and is rather too coarse for the dainty decorative pieces, but for some of the more rugged ones it is well adapted.

Gomphrena or Globe Amaranth, a half-hardy annual, is the best known of all Everlasting flowers, and next to Acroclinium is best suited for the decorating of frames. The seeds should be soaked in warm water before planting and the hard outer covering removed. It is best to sow the seeds in boxes, transplanting the plants outside when the ground is warm, one foot apart. The flowers should not be picked for drying until they are fully matured, and then should be hung up in a shady place heads downward.

Gynerium or Pampas Grass is the best grass to dry for winter bouquets and decorative purposes. The seed should be sown in the bed where the plants are to remain when the ground is warm. Do not pick the flowers and leaves for drying until fully matured.

The graceful, soft white feathery plumes of Pennisetum Longistylum are invaluable for covering foundations. This plant is among one of the most ornamental of the grasses and will last forever. The flowers of this also should not be cut for drying until fully matured.

Chrysanthemum Culture

BY C. F. GREEVES CARPENTER, F. E. S.

AMATEURS should not expect any remarkably good results the first season, as it is only by time and experience that one can hope to produce fine Chrysanthemums.

Seedboxes should be prepared in the usual manner, and almost filled with good loam. The seeds of perennials should be sowed thinly in March, covered with a layer of fine, sifted earth, and kept in a moderately warm temperature. As soon as the seedlings are sufficiently high they should be potted. If intended for decorative purposes in the house they should be allowed to flower in small pots; otherwise, they should be gradually hardened and set out in the open ground in May. During April dress the ground with well-rotted cow or horse manure, thoroughly spading it in to the depth of a foot. Just before setting out the young plants, the ground should be again spaded over, and liberally dusted with lime. The beds should be three feet wide and of any length. Rake over the soil, but allow it to remain higher than the surrounding ground, and then make a ridge of about four inches high around the entire bed, forming a sort of valley in which to set the plants. Draw two lines from end to end, but ten inches from the ridge at either side. Put the plants in these lines about a foot apart, and set thick stakes three feet in height at each end of the beds, and at the back of the lines. Between these stakes stretch wire to which the plants may be tied up as they increase in size. They now require plenty of water, but the ground should not be allowed to become sodden. If the foliage is a rich, dark green, the beds should receive a four to five inch dressing of well-rotted cow manure, but should it be yellow or discolored it is evident that the plants are receiving more food and water than they require; the remedy is obvious.

As soon as the young plants are six to eight inches high, they must be "pinched", or cut back to within a few eyes. "Pinching" should not be done unless the plants are of rank and succulent growth, nor if the stems are hard and woody. Select three or four of the strongest lateral shoots, and, with a pair of sharp shears, nip off the rest, taking care not to cut off the leaf growing at this juncture. This will enable one to obtain a few fair-sized blooms of good quality, but if more, and smaller flowers are desired, more lateral branches should be left. If new side shoots appear, they must be removed.

The first or crown bud will be at the top of the plant, and as it pushes its way upward it shoots out flowering branchlets, each of which have a central or terminal bud surrounded by three or more smaller buds. When the first bud appears, solid fertilizer should be discontinued, and liquid manure applied, though this, also, should be stopped as soon as the bud expands or shows color, after which only fresh water should be given. If it is desired to have several good-sized flowers on each plant, the crown bud and all the smaller buds must be removed, except the terminal buds, five or six of which should be selected. Leave the plant for a couple of weeks, and then go over it again, removing all the young buds which have developed in the axils of the leaves, leaving on each plant only three terminal buds. These should be at a comparatively good distance from each other, in order to give the buds and resultant blooms plenty of room in which to develop. If, however, it is desired to raise large, single flowers on each stem, the crown bud must be removed, together with all the others, leaving only the second crown bud. Soon it will be a flowering stem with small lateral buds which must be constantly removed in order to allow the whole energy of the plant to be given to the one remaining bud.

Frog-Hopper

The Frog-hopper is also called Frog-fly, Froth-hopper, Froth-fly, and Spume-bearer. Its spittle names, from fancies entertained as to its origin, are variously known as Frog-spit, Cow-spit, Cuckoo-spit, and Snake-spit.

In June and July, vegetation sometimes has on it, frothy gobs resembling soapsuds. In this suds, that oozes out of their bodies, the larvae and pupae live.

The Frog-hopper is so named from its protruding eyes, widely separated; and because of its ability to leap distances. The triangular larvae, tapering behind, and pupae, differ little in appearance from the perfect insect which has four large wings. The proboscis of the Frog-hopper is adapted for piercing the bark of plants on which they live.

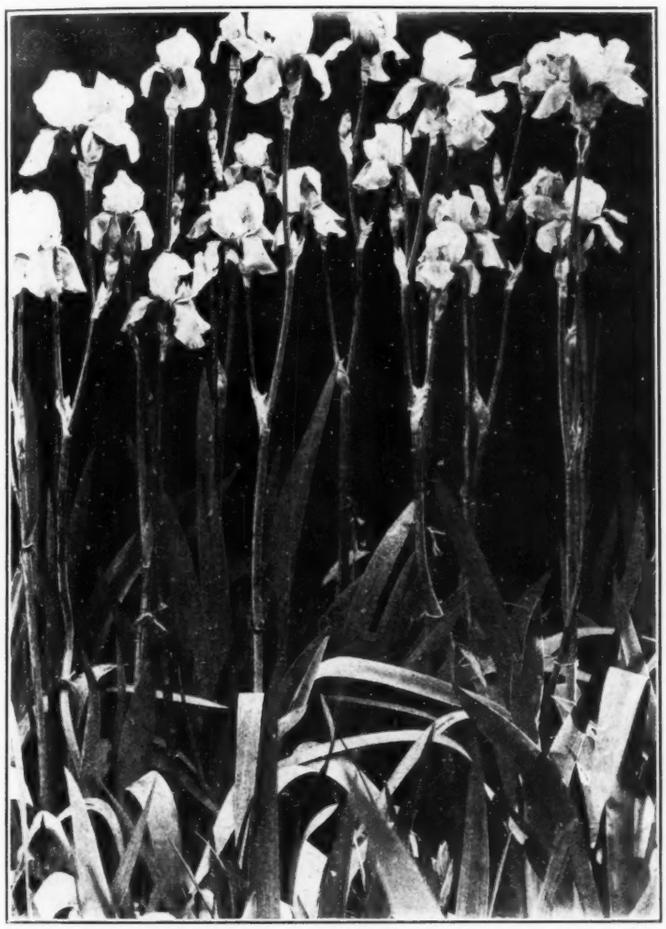
RENA BAUER, (Wis.)

The Iris

Iris Garden Notes of 1924—II

BY S. STILLMAN BERRY, (So. Calif.)

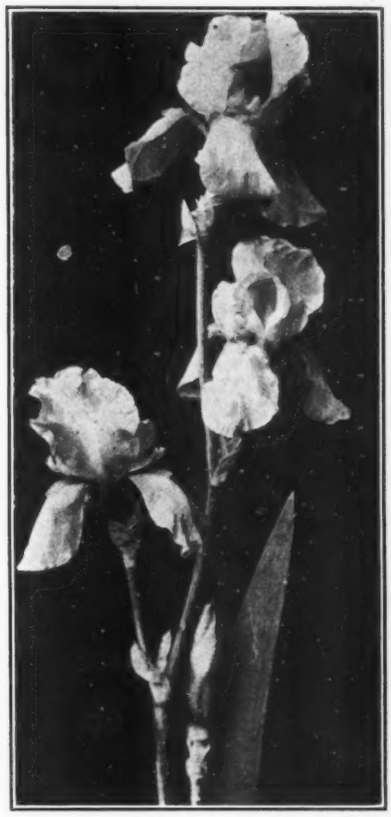
IT HAS always seemed to me a regrettable matter that such a disproportionately large number of people become enthusiasts for the big Pogonirises as compared with the other groups of the genus Iris; even though it means that the remaining portion of my notes will stand to interest a considerably wider circle of readers than what has been written before. It is not that the Bearded group receives too much attention,—the real day of the Iris in our gardens is still well ahead,—but rather that "t'other fair charmers" too often receive less than their due.



Part of a clump of the gigantic Mohr Iris *Conquistador*.
Taken in the writer's garden, April 22, 1924.
(Photo by W. N. Kline)

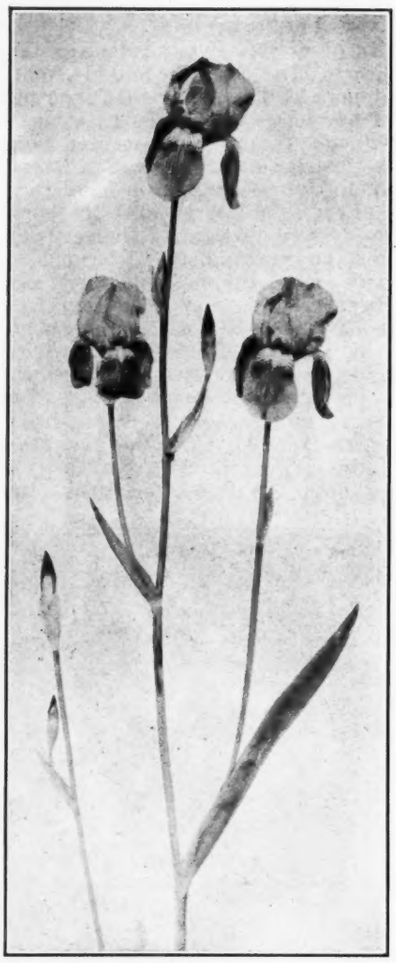
After the usual mid-winter run of the *kochii* and *albicans* groups, and a sprinkling of first blooms of sundry stray seedlings, which hereabout like to burgeon forth at almost any time without the slightest regard for propriety of weather or season, the pageant of the Intermediates got itself under way on February 3 with *Ivorine*. This lovely thing lasted but little more than a week, but it was a week of one wonderful mass of foamy cream. The other Intermediates, and the dwarf pumilas and chamaeirises, kept the display alive to the end of March; the best of them being doubtless *Fridtjof*, *Soledad*, and the new *Yellow Hammer*. The latter, though less pure in tone than *Soledad*, is a nice deep yellow and gives us a very valuable dash of color which we did not have among our Intermediate Irises before. The first flower of *Mesopotamica* unfurled on March 6, just one day before *Soledad* and almost three weeks ahead of *Orange Queen;* yet on the 23rd of May, when I left for the north, there were still a number of spikes in fairly full bloom. I do not know that even the redoubtable *albicans* can compare with this record for long continued display. On April 1 *Cecil Minturn* and *Edith Cavell* were on the stage; on the 6th *Tuscany* and *Ricardi Foncé;* on the 7th *Lewis Trowbridge;* and by then the procession had really begun.

In other Redlands gardens, notably those of Miss Hinckley and Mr. White, for none of the newer plantings have yet developed to such an extent as to vie with these, it commenced somewhat earlier. With them, *San Gabriel*, which Mrs. Dean was on hand to see for herself at the time of the spring flower show, was one of the very early ones, and proved itself beyond any doubt one of the most genuinely magnificent garden and exhibition Irises we have. Of its type it has no near rival, and for California growing it possesses another immense advantage in its splendid winter foliage, finer even than that of stately *Mesopotamica* We had *J. J. Dean* and others of the newer things from the same originator, in flower also; but their first showing was, as a whole, not impressive, and it will doubtless be the part of wisdom to withhold too positive report on them until after another season. So many newly planted things were so patently offish in their behaviour, that present criticism of them would be both hazardous and



A specimen spike of *Conquistador*
(Photo by W. N. Kline)

unfair. This was especially the case with the Amos Perry seedlings from England, although one or two of the ones which flowered, and these by no means the most touted of the lot, impressed us very favorably, even on the strength of this first showing. Nearly all of these are proving splen-



Iris—*Jacinto*
(Note branching habit; the whole of the spike unfortunately could not be included in the photographic field.)
(Photo by W. N. Kline)

did growers and promise to be in position to show pretty nearly what they are capable of in 1925.

Some say that altogether too many new varieties are being named and introduced, which is beyond peradventure true, but matters are only confused by premature criticism. There is bound to be a considerable amount of disappointment when varieties grown and selected under one distinct set of conditions are bodily torn up and transported to another *locus* for trial. As an example,—"Several of the (American) Irises . . . . sent me last Autumn," writes a well known English hybridizer, "have flowered during the past season, and I must candidly confess they have fallen a lot below my expectations." This same season an equally famous American Iris specialist, writing with reference to the late introductions of this very breeder, says, "Many of X . . . . 's I have my doubts about. I did not care at all for those I have seen, though of course I should not expect much in bloom from 1923 importations, and certainly there was not one that would not have been consigned to the dump had it appeared in my seed bed."

Returning over-seas we find another keen critic reporting that "We have grown a lot of American things here this season, but few of them have caused us much excitement. I still think that *Seminole, Virginia Moore* and *Shekinah* are the best we have had from your side . . . . . .*Valkyrie* (sic!) is simply awful to my mind."

Back to America again, and another grower writes: "There are many wonderful creations among the new foreign things but 50% of them should never have been introduced. . . . We do not produce many *Ambassadeurs* or *Dominions*, but we at least do not introduce a *Seminole* and then a dozen more first cousins. . . . Spring 1924 visitors unanimously lamented the modesty of American originators after they observed and compared new American Irises with the bulk of imported sorts."

And so it goes, all perfectly sincere and yet all at odds in their judgment; while we in California are like to have a different opinion still. Personally I believe that on the whole the English and French are no more at fault than we, and what should be demanded of a would-be introducer is reasonable care, not infallibility. The real point for each of us to remember is that *on the average* a given batch of seedlings will likely show up to very much better advantage on their own heath where the conditions prevail which governed their original selection, than they will later when turned loose in a cruel and critical world. We sometimes forget that. "Too many new varieties being introduced!" Not a bit of doubt of it! But *which* fifty per centum are the ones that should be left out? If a man selects ten seedlings to name and distribute out of some thousands, let us tell him to cut the number to five. But will the five he selects be the identical quintet which will best run the gauntlet of criticism in many far-off gardens and varied climes? I greatly doubt it. The best we can hope for is reasonable conservatism in dissemination and a certain amount of agreement as to eventual discards at the end. But lest we digress too far, let us get back to our own impressions of some of these things in the course of their transplantation to southern California.

SURELY there is no grower whose introductions cause us such keen anticipation as those of Miss Sturtevant. Among them there is always something interesting in store, always something unusual, always something truly beautiful and good. The past year however we were as disappointed as some of the over-seas folk, for the majority of the very new things from Glen Road failed to flower, and we had to content ourselves largely with varieties we had seen somewhere or other before. Of these *Avalon, Warrior, Sarabande, Mother-of-Pearl, Myth,* and *True Charm* were fine as ever, the first for substance, form, and finish, the second for height and dusky richness, the third and fourth for their dainty coloring, the fifth for its big round, crepy flowers, and the last for its trim outlines and neat penciling. *Avalon* has been the subject of a certain amount of criticism in the east the past year, but for what reason I cannot possibly imagine except that it is sometimes not very rapid of growth. The finest of the Glen Road plicatas that we have flowered so far is certainly *Delight*, and it was a joy to have it prove fully equal to my rosy memory of it as seen in its Massachusetts home. It may be mentioned parenthetically that there are some newer things in this group that I am expecting will measure fully up to it. *Mme.*

Iris, *Arlington* (Simpson)
(Photo by W. N. Kline)

Cheri, as it becomes better established is a magnificent thing, one of the very loveliest in coloring of all its class, and it ought to be more commonly seen. *Valkyrie* was another of the blends which was exceptionally fine last season. It is hard to believe that it could be in any way "awful" even under much duller skies, but below our bright sun this grand Iris is of the utmost richness, and of such size and majesty of carriage that it can be used

to give a fine note of strength and power in a bit of planting composition.

In Miss Hinckley's garden an immense clump of *Ensign* was notable for its stunning distant effect, but the glowing red tone tended to fade away as one approached it so that at first hand it seemed much less striking. This is probably a peculiar property of this special color, for I have often noted that the old *Mount Penn* behaves in much the same way. The big warm brownish Iris which I have previously referred to in these pages as *Glowing Embers* proves not to be that variety after all, but a rather splendid interloper which Miss Sturtevant now is calling *Sherbert II. Whiffenpoof* was another plant extra good for its type last season and we feel sure its originator would never have recommended its discard so precipitously if she could have seen the showing it made here. *Rose Madder* seemed to throw rather small flowers, but the velvety red-purple of its falls found many admirers.

Mr. B. Y. Morrison's seedlings, having been likewise distributed by the Glen Road Iris Gardens, quite naturally come to mind in the same connection, especially as a number of them are of very high rank, and in 1924 furnished us with some of our principal thrills of the season. *Damozel*, a rather plentifully marked flower which stands in memory as somewhat like a daintier, more fastidious, *Parisiana*, but, as it seemed to us, altogether superior, is one of the very finest new plicatas that has ever come to us for testing. It is an abundant grower and flowers with such commendable promptness and generosity that even a young clump soon stands out in one's garden. Another quite wonderful flower is *Kestrel*, a big, rich, deep purple Iris on a curiously robust stem, which seems to possess many of the desirable points of the touted *Dominion* Race without some of the constitutional drawbacks. If this Iris fulfills its early promise we certainly have something in store. *Petrel*, which Mr. White was flowering alongside, does not seem quite in the same class with this, but is still a handsome Iris which will probably bear watching. *Fenella* proved to be an excellent white of its sort, though of course a more commonplace type, while *Chlorinda*, which has perfectly enormous flowers for a yellow Iris, is not of the best form or habit and seemed to suffer in warm sun from a washy fading out on the falls, quite spoiling the effect save at a distance. However, hereafter we shall covet all Morrison Irises, as we do those of Mr. Mohr and Miss Sturtevant.

The William Mohr hybrids by the way continued to uphold their previous high reputations in Redlands gardens, though we only had *Balboa* that was new to us. This is a fine and imposing Iris, yet hardly so impressive from the standpoint of the whole plant as *Conquistador*, to which in many respects it seems quite nearly allied. The latter is always a truly astonishing thing for exhibition purposes and this year at our local show carried off highest honors in both the specimen bloom and six-spike classes. I shall expect to hear of its doing the same in no less august an assembly than the Royal Horticultural one of these days. The exquisite *Marian Mohr*, which I had a hard time with at first, is now making a splendid record for itself, but *Prince Lohengrin* has been exactly contrary and now has dwindled into a very weak grower as hard to handle as *Princess Beatrice* if ever a touch of rot sets in.

The Nebraskan Irises of the Sass brothers, so far as flowered here are in strong contrast to those of Mr. Mohr, being as notable for their remarkable and unusual colorings as the others are for substance and dimensions. Unfortunately they have been slow to establish themselves and none have seemed especially vigorous as yet. Perhaps they do not like altogether dry Winters, and a wet one, if it ever comes, will please them better. Of those we have succeeded in flowering my favorites are the daintily ruffled *Mid-West* and the yet more ethereal *Caroline E. Stringer*, a flower of somewhat similar type but an even pale pinkish lilac in color, which Mr. Sass matches, no doubt correctly, with the Pale Rose Purple of Ridgway. There can be nothing bold about so delicate a color, yet in mass effect, and especially if brought into juxtaposition with just the right tones of other Irises selected with a view to accentuate its pinkness, it would no doubt produce a very charming effect. Let us hope that this variety at least will prove to possess both a vigorous habit and a strong constitution for in all our lists there seems to be nothing else at all similar to it.

Mr. Williamson's Iris reputation has until lately rested almost entirely upon two originations, the redoubtable *Lent A. Williamson*, and the very different *Mary Williamson* (leaving the Apogon, *Dorothea K. Williamson* out of account,) and both were very fine with us in 1924. But there also stood out among a great array of seedlings sent from Bluffton under number, two, D-27 and 35, which seem to hold much of promise. The former is not a particularly large flower, but it is extraordinarily rich in color, something on the *Alcazar* type, but with the falls so rich and deep as to seem almost black in some lights. It also shows a decided tendency toward a second flowering period in the Fall.

Mr. Shull's *Nimbus* is reminiscent of D-27 and *Valkyrie* in its dusky sombreness, though very different from either in detail, while *Virginia Moore* is just the contrary in its psychology a fine bright yellow which would be indispensable because of its lateness and general dependability, if for no other reasons, even though it scarcely approximates to that ideal great golden Iris of which we dream.

An established clump of *Arlington* (Simpson) made a fine effect as the flowers were large, the stems of good height, and the flowers a rich bicolor composition which is quite telling. I have been somewhat put to it to think up a proper companion Iris to plant alongside this in an effort to bring out and emphasize the fine red-purple of its falls, but nothing so far tried quite accomplishes the particular consummation hoped for. One thing is sure,—*Lent A. Williamson* is best kept far away.

Another Iris which caused me much concern this year from the standpoint of color blending is my own *Jacinto*, the first seedling Bearded Iris, among a multitude, that I have managed to find temerity to name. It is a finely formed flower of size on well-branched four-foot stems, but so quiet and demure in coloring (though the general effect is not far from Ageratum Violet of Ridgway, it is practically a pinky-gray-lilac blend, with standards somewhat lighter than falls,) it is not difficult to quite kill it by the too close approximation of strong lavenders and similar positive colors in its immediate vicinity. Yet the rich purples of *Archeveque* seem to be in entire harmony and the latter has thus become the dominant note in the planting we have since been working out, with a foreground grouping of *Shekinah*, *Pancroft*, *Onnoris*, and some other light yellow and creamy things by way of contrast. The long blooming period of *Jacinto* is noteworthy, the first 1924 flower in my little patch opening on April 24 and the last one passing on May 20.

There was a considerable series of new American introductions flowering last Spring, remarkable chiefly for the oddness of their coloring (they mostly had little else in common,) which we found exceedingly difficult to judge. These included such things as *Red Riding Hood* (small and strange in color, but certainly very reddish,) *Prof. Seeliger*, *Rugajo*, (both of these reddish also,) *Orchid*, *Pensamiento*, *Steepway*, and so on. Some of the array are attractive and will stand the test of time no doubt, but others just as surely will fall by the wayside, however far beyond the present scope of the present writer's powers it may be to prophesy which.

Lime on Japanese Irises

One of your correspondents refers to success with Japanese Iris by employing lime. My experience is quite the contrary. I have found it advisable, under my conditions, to apply as much as four pounds of aluminium sulphate, technical grade, per square yard, making the application in half pound lots at intervals during a season.

H. E. H., (D. C.)

Timely Suggestions for May

BY BERTHA BERBERT-HAMMOND

(Southern New York)

Come take a wond'rous walk with me
Through country lanes, by orchards sweet,
For blossoming trees will bend again,
And birds their Maytime songs repeat.

TO THE Nature lover, a Maytime walk through country lanes is indeed a wonderful experience. One can scarcely imagine anything more beautiful or fragrant than an Apple orchard in full bloom. The air is heavy with the sweet odors;—Birds, Bees and Humans feel the spellbinding breath of May.

A woodland walk will reveal the May Violet and many other kinds of Nature's beauties, and will no doubt bring joy to the heart, by calling to mind the memory of bygone excursions to the woods in quest of the dainty Hepatica; the fragrant Arbutus; the fragile Bloodroot; the early yellow Violet; and other charming wildings.

If it has not been done before most small fruits and shrubbery may be set out the early part of the month. If the season is especially dry, apply water to the newly set plants and provide a mulch. Dust young shoots with pyrethrum or tobacco to prevent damage from pests.

As soon as the petals of the Apple and Pear fall, spray with Arsenate of lead, Bordeaux mixture and kerosene emulsion for control of codling moth, psylla, and other insect pests. Arsenate of lead may also be used on Currant and Gooseberry bushes to discourage the currant worm.

If the powder is fresh, white hellebore dusted on Strawberry leaves while they are damp with dew will destroy the sawfly and prevent their leaves being punctured by this pest.

Fresh hellebore or dalmatian powder or slug shot may be used for pests on Roses. For mildew, dust the Roses with flowers of sulphur.

As a check on fungus diseases, spray with a lime sulphur solution. To save time and energy one may with advantage add some lime sulphur to the lead arsenate spraying solution and so kill two sorts of pests with the one operation.

Finish any grafting of fruit trees that has not been done. Cultivate and mulch all berries. If Strawberries were not planted in August last, plants should be set out as soon as possible. Remove all runners from the plants set out last season in order to have better berries.

Though it might have been done to advantage ere this time, it is not too late to divide Phlox and other clumps of perennials that have become too large. When resetting the divisions allow plenty of room for spreading and the clumps will not need to be disturbed again for some years.

Bed out Geranium, Ageratum, Vinca, Moneyvine, monthly Roses, Carnation, Sweet Stevia, Abutilion, Sedum, double Violet, Farfugium, Coleus and Cyclamen plants. Set out seedlings that have been started in cold frame or hotbed; nipping back to insure stocky growth. Make a planting of Gladioli.

Sow in the open, seeds of Candytuft, Coxcomb, Honesty (Lunaria), Phlox Drummondi, Calendula, Cypress Vine, Hyacinth Bean, annual Poppy, Pansy, Portulaca, Aster, Zinnia, Nasturtium, Helichrysum, Scarlet Flax, Sunflower, Verbena, Godetia, Mignonette, and Petunia. Start Madeira Vine, Gloxinia, and Montbrctia.

If after seed has been sown, a dry spell should come, water the seed-bed daily and cover with a mulch to conserve the moisture. Seedlings that have just been transplanted from the frames or flats must not be allowed to suffer for moisture, or from the direct rays of the hot sun.

By this time the Iris, Bleeding Hearts and Peonies are in full foliage and in bud and require plenty of water. Being gross feeders, Peonies will appreciate an application of liquid fertilizer and if one has the courage to do it, pinching off all but one flower bud to the stem will assure larger, if fewer blooms.

Do not throw away spent bulbs of Daffodils, Tulips, Narcissus, Easter Lily, etc. While not of use for indoor forcing these bulbs, if planted out, will regain vigor and bloom nicely in the open ground. The bulbs of Chinese Sacred Lily may be discarded, for in this climate they seem useless.

Make constant use of your garden note book, by keeping a record of the variety and date when the seeds are planted; time when seedlings appear; when seedlings are thinned out or transplanted. Other important garden operations should also be noted; and timely comments of the gardener appended. Such a record, even if incomplete, will be of value.

If sudden drops in temperature are to be expected in your locality in May, keep on the watch for signs of frosty nights, and be prepared to supply some sort of protection to seedlings and bedding plants in case of need. Be sure that house plants are not put out in the open until all danger of frost is past.

When working in the garden wear gloves to protect the hands from roughness, injury or possible infection. Failure to take this simple precaution last season, cost an acquaintance weeks of suffering and made the amputation of a finger necessary—a calamity, indeed, to this well-known, professional violinist.

Do not allow spring enthusiasm to beguile you in attempting too much in the line of gardening. A small well-kept garden spot is much better than a large, partially neglected patch. Have no more garden than you are willing to spare the time to care for properly, so that the bag of golf sticks swung over the shoulder need not mean that the weeds will be sporting in the garden.

Gall Fly

Who has not noticed the interesting nests of the Gall-fly larvae? On the stems of the Goldenrod that we call drum-sticks, or the multiple Goldenrod Gall, consisting of a leafy bunch or ball of leaves. On the Oak we find Oak-apples which are white with pink dots; or the more common green balls which later turn brown and dry, the Oak-plum Gall found on the Acorn-cup is bright red in Autumn. Then some are berrylike, and found on the leaves. Sometimes branches are covered with gnarled Gallnuts the size of Hazel-nuts and larger, often covering whole trees. Galls are also found on roots, and a variety Oak grown in Asia is widely used in making ink from its root galls.

The Galls found on Rosebushes look like large round burs as they are covered with thorns. The very pretty rosettes on Willow and sometimes shaped like a Pine-cone, are caused by the two-winged, mosquito-like gnat laying their eggs in the leaf-bud. These cones are stunted leaf scales, in which the meadow grasshopper finds a favorite shelter to deposit her eggs. The reddish, oval Willow-gall is about one inch long, with a beak-like tip,—the blighted bud. This is the home of an orange colored maggot one-fifth inch long.

Each kind of Gall-fly attacks its special kind of plants. The female punctures a hole where she is to deposit her egg, with a kind of saw-teeth at the extremity of her body. Her ovipositor is long and slender, in part spirally rolled up when not in use, and lodged in a groove on the under side of abdomen. Through this she lays her egg, together with an irritant fluid that causes a sort of tumor on the plant. In this gall growth the egg grows; then hatches; feeding on the plant juices in their most concentrated form. The larvae transforms into pupae stage, then into the perfect insect, when it eats its way out of the gall. The round escape hole is a common sight.

RENA BAUER

Month by Month with the Flowers
May

BY CHARLOTTE S. ALLISON, (Tennessee)

PRUNE shrubs soon after they have finished blooming.

Early in May dig a little finely ground bone meal around the plants of Delphinium.

Hardy perennials blooming late in the Summer must be planted before the middle of this month.

In transplanting seedlings never press the soil close up to the neck of the young plant.

Move the Anemone Japonica in this month. As a rule it will not bear transplanting in the Autumn.

Iceland Poppies, with their evergreen foliage, are classed as perennials, but bloom the first year from seed.

If blooming Pansies are desired for the late fall months the seed should be sown at this time.

Transplanting is more successful if done during a rainy period. But if this is not possible then transplant in late afternoon, and protect the plants from the sun for forty-eight hours.

The chocolate colored flowers of the Calycanthus Floridus or Sweet Shrub are one of May's treasures. The good qualities of this old favorite of a decade ago are bringing it again into fashion as a desirable shrub to include in one's collection.

If seed of Phlox Drummondi is sown in rich soil, in a warm, sunny place; the individual plants given sufficient room to grow and develop; and the old flower clusters removed it will bloom all Summer until frost. Needs abundant moisture in midsummer.

For those who enjoy something "different" in their porch boxes there is no more interesting plant than Mesembryanthemum crystallinum, or common Ice Plant, with its thick foliage covered with glistening dots resembling ice. It requires very little water and is excellent for a dry and sunny place.

A plant found in all the old-time gardens, and which is fast coming back to deserved popularity, is Lunaria, more familiarly known as Honesty. This plant is grown more for its great flat pods through which the seed can be seen than for its numerous pinkish purple flowers. The dried seed pods make an interesting addition to winter bouquets.

Salvia Farinacea, with its light blue flowers, although classed as a perennial, will bloom the first year from seed sown in the open ground in May. While the flowers are not the ultramarine blue of Salvia Patens, the true Blue Sage, yet it is a far better variety for the average flower grower and he is far more certain of success than when planting the tender variety.

Rhododendrons should be planted in the Spring after the weather is settled; but they can even be planted in Summer, if they are kept well supplied with moisture; but they should never be transplanted in Autumn. They like a cool, moist soil, with plenty of light and air; but also do well in full sunshine. Mountain Laurel combines well when planted with Rhododendrons, as also do certain Lilies.

An excellent plant to use in shady places is the Mertensia virginica or Blue Bell. As the name indicates the plant bears drooping clusters of blue, bell-shape flowers in early May, and the blooming period lasts for six weeks after which the foliage disappears. The seed should be sown as soon as they are ripe. After becoming established the plants may remain undisturbed for years.

For continuous bloom there is no more satisfactory plant than Flowering Flax. The individual flowers are short lived and are not adapted to cutting, since the flowers are not durable; but they are borne in such quantities, and the blooming period is of such length, that the plants give a brilliant display of color in sunny weather. The plants need full sunshine to give best results.

The Philadelphus coronarius or Mock Orange is one of May's fairest flowering shrubs, with every stem loaded with white flowers of a fragrance unsurpassed by any other shrub. The usual rule is followed of pruning after the blooming period is finished as the flowers are borne on the previous year's growth. One may soon have a hedge of these shrubs as they are easily propagated by suckers.

The busy woman who has little time to devote to the care of her flowers should plant that near-hardy annual Love-in-a-Mist. The seed are sown in any good garden soil early in the Spring, and the plants require little further care other than thinning out the seedlings if necessary. It does not bear transplanting, but by successive plantings one may have continuous bloom throughout the Summer. The fine-cut foliage, the clear color of the flowers, and even the curious seed pods form interesting parts of a summer bouquet.

The Lantana is a free flowering plant excellent as a single specimen in the garden bed or for the making of low hedges. The blossoms are of practically little worth as cut flowers, unless used in combination with others of a more fragile and lace like form. The trailing Lantanas are fine for hanging baskets, planted alone or in combination with upright plants. Scarlet Geranium is good for combining with it. The Lantana requires a sunny location, and after it is well established stands drought without damage, and is a valuable addition to any collection of flowering shrubs.

The Pelargoniums or Lady Washington Geraniums are at their best in this month, and their blooming season may be considerably lengthened by keeping the plants shaded from the sun for part of the day, as they cannot endure the hot sunshine, although at the end of the blooming season they require the opposite treatment; for at this time they need just enough water to keep them alive and not enough to encourage new growth, and must be placed in the full sun to secure a ripened growth. At this stage the leaves turn yellow with age, and the plant needs a severe pruning and repotting.

Notes from California

IT IS claimed in McGroarty's History of California that the parent of all California Pepper trees (Schinus molle) is a pistillate tree still standing at the San Luis Ray Mission in San Diego County.

Not all Eucalypts are known as Gums but many as "boxes," "barks," "butts," etc.

We have *here:* Grey Box, Common Box, Yellow Box, Stringy-bark, Mountain Stringy-bark, Yellow Stringy-bark, White Stringy-bark, Victorian Iron-bark, Narrow-leaved Iron-bark, Broad-leaved Iron-bark, and Red Iron-bark. Also Wooly Butt, Black Butt, Bastard Mahogany, Swamp Mahogany, Red Mahogany, and a long list of others.

Referring to Editorial comment:—Eucalypts are hard-wooded trees, not in any wise of nature of Cottonwood or Poplar. Though differing somewhat in texture there is none so soft as Poplar, and the Blue Gum, E. globulus, is *hard* wood.

"A CALIFORNIAN"

Cut Tulips

When Tulips are being used as cut flowers, they should be removed from the water and placed in a cool place over night; and replaced in the water in the morning. When left constantly in the water for several days, they become overloaded and sodden with it. The supply of water they have in them at night is abundantly sufficient to hold them from wilting until morning.

BENJAMIN C. AUTEN

The Rose

Early Garden Work With Roses

BY J. HORACE McFARLAND, Editor *American Rose Annual*

SHORT will be this statement because short are the hours of the May days within which one wants to read or otherwise occupy himself than setting his garden to rights.

If I had my way with the calendar, April would have forty-five days, May sixty, and June, (if it was a good Rose June,) a million days! As I cannot change the calendar, I can properly only suggest, in these busy May days, a little work with Roses that will tend toward June joys.

All the new Roses that are to be planted ought to be in the ground just as much before the first of May as is possible. Each year's experience confirms my feeling that there is a critical date in Rose-planting, on the wrong side of which Rose prosperity is hard to secure. I suspect that the root-hairs which reach into the soil and get from it the elements which are to be transmuted into the beauty above, begin to form very soon after frost is out of the ground, and that when otherwise seemingly dormant plants are moved thereafter, these almost invisible hairs are shorn off and the roots are forced, if they are to live, to send out a new set, which is not always within their power.

I presume, therefore, that heeding continuous admonitions in this column, my Rose friends of THE FLOWER GROWER have planted the Roses they are to have come into joyous bloom in 1925. What is there to do with them next?

FIRST of all, the most thorough cultivation of the ground is essential. It ought to be broken up deeply quite early, and finally so as to leave two or three inches, at least, of dust on the surface, if it is dry enough, during May. This early cultivation means receptivity both to vital air and vital water. In my own practice I follow it with a mulch, and my pet mulch at present is the peat moss which is not commercially too costly, and which keeps the soil open and loose, receptive to water but inhospitable to the germination of the weed seeds.

Then I want to urge careful watching of the plants. If by any chance they have not received a cautionary spraying and the buds are still completely dormant, early May is not too late, at least in the northern part of the range reached by THE FLOWER GROWER, to let them have bordeaux mixture, or lime-sulphur, or "Sunoco," or some other one of the fungicidal applications that do so much more than control one scale or one disease.

But if the buds have started and the leaves are about to break, then the most cruel thing of all needs to be done. To fight against black-spot and mildew, this exquisite young foliage should be doped and dosed, just as soon as it begins to expand, with the sulphur-lead dust that up to date is the safest and best means of preventing injury. Although the prescription has been given repeatedly, it is not as well known as the Ten Commandments, and the latter are not too familiar to us.

Take nine parts of dusting sulphur (and I mean *dusting* sulphur, not the powdered sulphur of the drug store but a real dust, easily and cheaply obtainable) and one part powdered lead arsenate. Mix the two intimately, and in the early morning when the dew shows in pearls along the edges of those lovely young leaves, shower them completely with this dust, so that some of it adheres to the top side and the under side of every leaf.

DO THIS mean thing in two weeks, and again in two weeks; and keep it up not more than three weeks apart, all Summer. Any decent mother tries to *keep* her baby clean, and even a boy's ears must be washed when he doesn't think they are dirty. It is prevention we are after, because there is no cure for black-spot, and the leaf attacked by it is dead, and dangerously dead, because it will infect other leaves.

My Rose experience leads me to believe that those who complain about black-spot and mildew are either careless or lazy, or both. Neither trouble needs to be endured; both can be controlled.

Now in the 1925 *American Rose Annual* there is a rather wonderful suggestion that mildew follows the deficiency of potash in the soil. This suggestion, which comes from Australia, is chemically considered and stated, and in consequence it is worth attention. If any FLOWER GROWER reader is willing to do it, I would be delighted to have him try out the use of some form of potash moderately on the Roses which may heretofore have shown the strongest disposition toward mildew, always leaving one plant untreated as a check plant, so that the experiment may be intelligent and honest.

A little wood-ashes or some other potash application stirred in around the plant and the result watched, may be well worth while.

In late May, and in some parts of the country these words will reach, the Hugonis Rose will begin to distribute its golden glow in the garden. I am not making any suggestion about treating it, but a great many suggestions about enjoying it, for it is wholly worth while.

Some Things I Have Learned About Roses

BY ELLA C. HORTON, (West. N.Y.)

THAT—It pays to start right, by selecting a site for the Rose-bed or garden somewhat sheltered from the north and west winds. I started with a bed of twelve Roses. In the two or three years that they did not do well, I was learning. Now, the garden is situated a few yards south of the house, with a high trellis on the west side, the length of the rows, dense with *Dorothy Perkins* Climber. Those same bushes in the new situation were a revelation. The old bed was too shaded, in too strong a north wind, and was not well drained.

That—Trenches dug two or more feet wide and two feet deep, with the last six or eight inches filled with small stones or other material for drainage, and eighteen inches of properly prepared soil, which is "one-third top soil, one-third heavy clay subsoil (or good garden soil) and one-third cow manure," thoroughly mixed, are considered ideal for Roses. Land that is naturally drained would not need the artificial drainage, and where there is a bottom of "hard pan" where water stands, three feet would not be too deep to excavate. There are those who tile-drain such a situation. Roses cannot thrive with "wet feet." Soil taken out at the lower depth should be discarded.

That—It is best to prepare the beds in the Fall for spring planting, and in the Summer for fall planting, as the elements can settle and level the beds, much better than "John's" boots.

That—A bucket of lime evenly distributed for every twenty-five feet of bed in the lower part of the trench sweetens the soil.

That—A bucket of bone meal nearer the top is acceptable food for Roses.

That—A large handful of sand and three of charcoal placed directly under the roots at planting time, is said to help varieties that lose their foliage early, to hold it quite well to the end of the season.

That—Budded stock should be planted with the bud about two inches below the surface of the soil; own root stock a little deeper than it was before.

That—Hybrid Teas should be set from eighteen inches to two feet apart, according to the vigor of the variety. A foot is room enough for Polyanthas, while three feet is not too much room to give to Hybrid Per-

petuals, if space is available. Climbers should have six feet.

That—Fall planting is being more and more advocated by experienced Rose-growers, if the beds are properly prepared and adequate winter protection provided.

That—It is a wise precaution to give a light coating to the soil in the Fall, with Sulphate of Iron, though one may not have had black spot, for a *spore* will "run a mile" to fasten on a Rose bush.

That—It is good practice to have the bushes and soil thoroughly sprayed with Lime Sulphur or Bordeau Mixture when the fruit trees are getting the dormant spray "to start them out with a clean bill of health."

That—Many are using the dust spray: nine parts dusting sulphur, one part arsenate of lead and one part tobacco *dust*, which gets other "bugs and bothers" also; applied when the bushes are dormant, and every few weeks for most of the season, in the morning when the leaves are wet with dew.

That—Black spot can be prevented —it cannot be cured.

That—All fallen or diseased leaves should be carried away *and burned.*

That—For the most beautiful blooms; Hybrid Teas, and Teas, should be pruned in the Spring to two or three buds on the weaker growths; on the stronger, three or four; Hybrid Perpetuals pruned to six or eight buds; Polyanthas, only dead or too old or too crowded wood cut out; and perhaps the tops trimmed to keep a shapely bush. Before Winter sets in all canes should be trimmed back to eighteen inches or two feet to prevent the plant loosening in the soil from high winds.

That—After Climbers have blossomed, the wood may be all cut out to throw the strength of the plant into the new wood, which will bloom the next year; unless a hedge or windbreak is wanted, when much of the wood can be left.

That—When cutting Roses, not more than two buds should be left on the branch; three on very strong varieties, as that throws all the strength of the plant into one or two buds; and the next blooms are much finer than if the strength had to be divided over a long branch.

That—The best time to cut Roses is in the early morning.

That—Most Roses are much more beautiful if cut when the petals just begin to unfold. Moreover, it is much better for the bush not to let them "ripen."

That—If when Roses are cut, they are placed in the refrigerator or in a dark corner of the cellar, they *actually grow.*

That—After the middle or last of July no more trimming should be done, for the growths that start after that will not have time to ripen sufficiently to withstand the Winter.

That—As many Roses cut early in the season will have a long stem, two or three of the lower buds can be used for a "cutting," and thus one can duplicate one's own splendid varieties. Cuttings can also be rooted in August.

That—Roses should not be fertilized or watered after September 1st to insure their proper ripening or hardening for Winter.

That—"Ruthless" disbudding insures one fine bloom on a branch instead of several inferior ones.

That—Early in April and again in midsummer a cupful of wood ashes to a plant acts as a sweetener of the soil and fertilizer.

That—A trowelful of soot to each plant is said to intensify the coloring.

That—Liquid manure applied after it has rained or after the Roses have been watered, is excellent to keep them growing, as is a trowelful of bone meal occasionally. Dried sheep manure, which can be purchased of a florist, can be used for the liquid, if there is no other on the place.

That—Sooner or later, when the ground around the Roses begins to get dry, if a trowelful of a mixture of bone meal and pulverized sheep manure is dug into the soil, and if it does not rain, a good soaking with water is given, then a thick mulch of lawn cuttings (when the peat-moss has given out) is covered over the beds, no more watering may be needed —surely no more cultivating and weeding.

That—The soil should never be cultivated deeper than two inches, nor fertilizer applied nearer than five inches to the plant.

That—After the ground is lightly frozen, Roses should be protected for the Winter. Various methods are used. One, that is, I believe, acceptable to perhaps a majority of Rose-growers, is mounding the plants ten inches high if possible, with dirt, covering the tops with evergreen boughs, though cornstalks or straw would do, with or without strawy manure between the plants. I have no use for leaves, for they become so soaked and packed. In extremely cold climates the only safe way is to bend them over and cover with soil, or dig carefully and bury in trenches. Dr. McFarland says: "Any Rose is winter-hardy anywhere if sufficiently protected, and the matter of sufficient protection is often intensely local."

That—There is no need to learn from bitter experience how to grow Roses, with the wonderfully helpful Rose books published lately by Capt. George C. Thomas, Jr., Dr. J. H. McFarland, and Robert H. Pyle.

That—There are few things in the year that give more pleasure than receiving *The American Rose Annual,* published in March for the members of the American Rose Society.

That—As having a hobby is strongly advised, I can think of nothing safer, saner and altogether more delightful than the growing of Roses.

Burned Brush Piles and Potash

I HAVE just received the March number of THE FLOWER GROWER and notice the article in the Answers department headed "Potash in Wood Ashes." The Editor of *Rural New Yorker* promptly and confidently replies, "It was the ash, etc." But this reminded me of an article in *The Country Gentleman,* of February 7th, entitled: "Some Things We Do Not Know," written by J. Sidney Cates. I should like to reproduce for your readers the whole article but, instead, will give a few brief extracts. He writes:

"What does burning a brush heap do to the land? Here is something we need to label as not known. It is very easy to make the glib explanation that ashes from the burning brush add to the soil fertility. It is also easy to explain away that explanation.

"Not many years ago I bought a poor, run down farm, and seeded the worst field to rye and crimson clover. The following Spring the field showed only a slight greening over most of the surface, but on half a dozen spots, six feet across, both the clover and the rye had made more than double the growth of the rest of the area.

"I learned that these rich areas marked spots where brush heaps had been burned,—three years before. I also learned that ashes had been applied on part of this land, but with no apparent good effect."

The writer goes on to say that he had Professor Whitney take samples of the soil and test them in pots, planted. In one case the ashes were carefully removed and applied to a pot of soil which had not been burned. The burned soil *with the ashes removed* made just as good growth as where the ashes were left on the land. The ashes applied to unburnt soil had only very slight effect when applied to pots of unburned soil.

Mr. Cates goes on further to give other cases where materials which, in practice, gave valuable results as fertilizers, but which did not show, on analysis, any of the mineral fertilizer elements supposed to be essential to plant growth. One was in Hawaii and another in Louisiana—both on sugar plantations.

Now I remember that, when I was a boy on a Connecticut farm, we carefully saved our wood ashes and used them in the hills when planting corn. But I never knew anyone to plant rows without the ashes for a comparison. We simply took it for granted, knowing with certainty that the ashes contained potash,—for hadn't we made soap?

On the other hand I used to notice a spot where charcoal had been made in a kiln and which showed a good growth of white clover years afterward. (It was very sandy soil.) It would be interesting to burn some more brush heaps and remove the ashes and put them on other soil and compare results.

GEO. S. WOODRUFF

The Tent Caterpillars

BY C. F. GREEVES CARPENTER, F. E. S.

THE Forest, or Apple Tent Caterpillar, as it is often called, is of interest both from the point of its peculiar habits and economically; as it is one of the most destructive insects occurring on fruit and shade trees throughout the United States. Everywhere, at certain times, one sees trees partially or totally denuded of their foliage and huge conical tents between the forks of the trees.

Tree partially defoliated by Tent Caterpillars
(Photo by Herman Hornig)

The parent moths are light reddish brown in color with an oblique wide band of a lighter shade edged with white in the centre of each forewing. They measure from the tip of one wing to the tip of the other about an inch, and the average length of the body is about half an inch. Eggs are laid by the females in bands about half an inch wide which completely encircle the twig on which they are laid. Each batch contains from two hundred and fifty to four hundred eggs, and these are covered with a protective secretion which enables them to withstand the inclemencies of the weather. The embryo insects become fully developed within the shell of the egg before the severe weather comes, but they do not emerge until the warm weather of Spring. The young Caterpillars are dark, or black in color with a metallic to black colored head; and have a row of pale blue spots on either side of their body, one on each segment; and a white stripe along the back; while the body is thinly covered with yellow hairs.

The Caterpillars seem to be imbued with the instinct of community welfare as they all work together on the construction of a tent. This is made of fine silken threads and is usually placed over or near the empty eggs from which the caterpillars have emerged. If food is plentiful they make this their permanent abode and build a larger nest, otherwise they migrate to a suitable spot; (usually a well-cultivated, nicely kept orchard) feed on the "fat of the land"; build large tents; and, incidentally, ruin the orchard from bearing any fruit that year. When mature, the Caterpillars measure about two inches. During the heat of day they take a siesta in their tent; and they also seek shelter in it during inclement weather. They seem at this stage of their existence to acquire a roving disposition, and long silken trails woven by the larvae may be discerned on the limbs of the trees in an upward course from the nest.

In reality they are searching for suitable quarters in which to construct white, oval cocoons about an inch long. These are made with an inner lining not unlike parchment in texture, and covered with coarse, loose threads on the outside. Inside the cocoon, the Caterpillar undergoes a transformation or pupates. The pupa is about three-quarters of an inch long, oval in shape, and dark brown in color. From two weeks to a month are spent in this stage before the adult moth emerges.

The Tent Caterpillar is said to be a native American insect and is one of the few native species of economic importance; most of the well-known pests having been introduced at sometime in the past from Europe and the Orient.

The Wild Cherry is the favorite host plant of this insect, but it soon migrates to cultivated orchards, and works great havoc by eating the leaves and thus preventing the trees from bearing fruit.

Close-up view of nest of Tent Caterpillars in crotch of tree, showing Caterpillars at work enlarging it
(Photo by Herman Hornig)

In order to render every assistance to orchardists it would be a step in the right direction if people would destroy the egg bands in the Fall; (they are quite conspicuous on the trees) and by burning the tents with a kerosene torch in Spring. It may seem rather inhuman to kill these insects in such a ruthless manner, but as they cause great loss annually to orchardists, by ruining the productive powers of the trees, it is undoubtedly the lesser of two evils. For the same reason, Wild Cherry trees should be removed and burned as it is these trees that the parent moth selects on which to lay her eggs.

Our Birds

The Friendly Wrestlers

BY DELPHIA PHILLIPS, (Calif.)

"NEVER heard of such a thing," everybody exclaims when told about these cat and duck friends, and their wrestling bouts, but seeing is believing, and if they are patient enough sooner or later the show will be staged for them.

An unusual friendship—Maltese cat and Muscovy duck

Bill, the cat is a big Maltese, and Judy, the duck, is a beautiful White Muscovy, who was given, when a wee little creature, to her present mistress, who lives on Balboa Island, California. Judy grew up, and so did Bill, and their wrestling probably began by their feeling a bit jealous of one another. Judy has always seemed the more aggressive of the two, and it is likely that she began hostilities. She began snipping at Bill, and he began biffing back at her with his paw.

Finally Judy grew bolder and would give the cat a nip here and there. It was easy to take up a fold of his skin in her large bill (as shown in the picture) and Bill, wishing to retaliate, could only grab the duck about the neck and try to throw her, as he could not bite through her thick feathers. For a moment they clinch, then over goes Judy with a fine flutter of white feathers. She will not let go of Bill's hide, so there is a great mixture of fur and feathers as they roll over in a promiscuous heap. But they never hurt each other, and in a few moments may be seen eating out of the same dish.

For more times than their mistress can ever tell they have performed these wrestling stunts, and sometimes Judy, not content with getting a hold on Bill's back, begins at the root of his tail and bites clear to the end of it before she stops, just as we have seen ducks run their bills along through the water to get food.

But there are times when a truce is declared and the duck and cat lie down together. Lying in the warm California sunshine in the mistress's back yard, the handsome duck trims her feathers, carefully running each one through her bill. Then, in motherly fashion, she reaches over to Bill and taking a small bunch of his fur in her bill pulls it through to the end, thus making him presentable according to duck standards.

Bill appears to really enjoy this attention, and it is only when his nurse gets to a certain tender spot on his back that he objects. Then he biffs her with a paw, and in all probability, there will be another rough house between them.

The Wrens and Some Bird Questions

I HAVE but recently become a subscriber to THE FLOWER GROWER but as I joined the ranks because of the Bird department, I hope to become an active member thereof, and glean many a bit of information. I have been both a lover and a student of birds for twenty years, and, while the things which I know not, would fill volumes, yet there are a few things which I do know.

Mrs. McCready (I feel sure it is "Mrs." since she kissed the baby Wren!) asks "How many have ever had that thrill?"

I raise my hand. I have had it many times. A baby Wren is never afraid unless its parents tell it to beware! It will almost always hop from its first perch to my finger, if I hold one finger gently toward it. And I often raise them from a dangerous perch to a safe one, in that way. Of course, they know me, because I make it a point to be close at hand much of the time, and the babies see me as soon as they peep out of their door.

I am anxious to know several things. One is: Are there two varieties of Downy Woodpeckers,—a northern and a southern one? If so, how do they differ?

I never heard or read of such, and can find no authority for it; but was told that it was so.

Why do Humming Birds not increase? Each year a pair nests here, and the two young ones grow up, but never appear the next year.

Does anybody know what enemy deprives us of Wrens? On our premises we raise from twenty to thirty each year (three broods if a long season) and yet we never have more than two pairs nesting here.

MRS. E. A. TAYLOR, (So. Minn.)

English Sparrows Outwitted

To those who have had to see their Bluebirds and Purple Martins chased away by the rats of the feathered kingdom, English Sparrows, I offer this as the only means I have ever discovered, of outwitting them.

Build the nest box with a plain "pole" perch before the entrance and fasten two bare copper wires one-half inch apart on its upper surface. Connect these by insulated copper wires to a three-cell "hot shot" battery and a Ford induction coil with a switch near some window from which the box can be seen. When the Sparrow alights on the perch, throw the switch and put the high tension juice to him. A couple of such doses has a wonderful way of persuading him that there are other and more desirable locations.

Connections should be made by someone who understands such matters. It would take too much space here to show the device in detail. The induction coil and vibrator are necessary to "step up" the juice to sufficient intensity to enter the bird's feet in dry weather.

W. A. BRIDWELL

Humming Birds Bathe

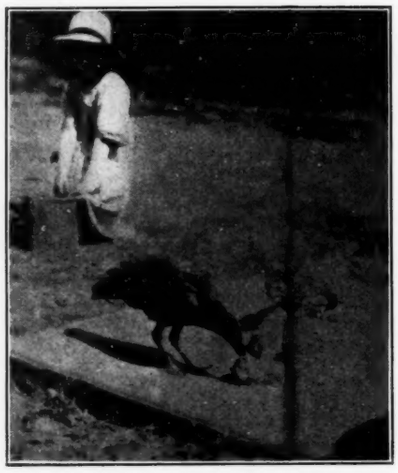
Humming Birds *do* bathe the same as other birds. Two of them, last Summer, perched on the rim of my water bucket, which sets at the back door, with water running all the time. Although the spray was running on the lawn some twenty feet away, this pair of Hummers preferred the water bucket. I stood less than nine feet from them and watched the performance.

M. M. BIEDERMAN, (Wash.)

Story of a Pet Crow

BY MRS. M. N. WILCOX, (Kans.)

WHEN my son appeared from the pasture with a half grown Crow in each hand, I insisted on his returning one of them to the nest; for I was well aware of the difficulties encountered in raising a young bird. The time was mid-summer, with warm, balmy nights, so I knew there was no danger of the Crow suffering from the cold. He was placed on a comfortable Walnut limb, about five feet from the ground, close to



He liked to rob the kitten of her meal

the kitchen door. He shook his feathers, then calmly looked at the scenery from all sides, seeming well pleased with his surroundings. The task of feeding him began at once, for he opened his expansive mouth and began to caw. Of course fish worms was the first thing that came to my mind, so my son spaded up a generous supply and we placed them in a bucket of damp earth. He seemed to relish them, so I fed them as long as he would open his mouth. He remained perfectly quiet, never moving from the limb, utterly oblivious of the movements of the human family all around him, nothing seemed to be of any interest except to be supplied with food when necessary. And such an appetite! Quantities of worms, bread and milk, and corn bread found their way into his capacious mouth. As he grew older he seemed to tire of the worms. When I fed them to him he would hold them in a small pocket under his bill until I went away, then he would empty them out. As a Crow has no gizzard, they cannot digest hard food of any kind like other birds. They will dig up and eat corn that has been planted long enough to become soft, but will not touch it when hard and dry. It wasn't many days until Grip was scampering all over the tree, trying his wings, but would come down quickly within reach if there was any food in sight.

Now few people are aware what a dainty and fastidious bird a Crow is. Not a feather is ever allowed out of place, or soiled. They are fond of their bath; during the hot weather I have known this Crow of mine to bathe as many as five times a day. It is impossible to raise a young Crow if he is placed in a cage of any kind, for if their feathers get mussed or soiled, they simply grieve themselves to death. A Crow also resents being handled, for the same reason. Grip would often stand still and allow me to smooth his feathers, but it would have to be the right way. To forcibly hold him down with his feet in the air was an unpardonable offense. It would take at least ten minutes for him to smooth out his feathers to his own satisfaction. A Crow has a quick and ungovernable temper, and is much wiser than he looks, and will learn to do things in an instant, which are not forgotten either. It wasn't long until Grip had graduated in flying and had become quite an expert; he really made a game of it, too. He would swoop down from the highest peak of the barn like an aeroplane making a queer noise, and the chickens would all start for cover, thinking it was a Hawk. The cat must have thought he was a chicken, for she never offered to molest him. He took great delight in teasing her and walking by her as close as possible. One day she struck at him with her paw when he persisted in trying to steal a piece of rabbit from her kitten. It didn't take my Crow very long to locate my sleeping room—he managed to pick a hole in the screen large enough to admit his head, and at an early hour he would thrust his head through that hole and caw in a loud, harsh voice for his breakfast.

As soon as he saw me leave the bedroom, he would fly around to the kitchen door and be waiting for me there. As soon as he had his breakfast, he would give no further trouble. His life was made a burden many times by the Blue Jays; seeming to have a special dislike, swooping down upon him in a very vicious manner whenever they saw him in the trees. No matter where either my daughter or I went on the farm Grip would always go along. It was impossible to slip away from him, although we tried it many times. One day I was picking Peas and he lit on my hand for an instant to get a closer view, then pitched into the Peas right and left, picked all sizes, of course throwing them on the ground. I tried to keep him from seeing me in the act of pulling Radishes, but his bright eyes took it all in, and when my back was turned, proceeded to harvest the whole crop, or at least all he was able to pull up. He wasn't strong enough to pull only the very smallest ones;—he would strain and tug bracing himself on his tail, but he couldn't budge a Radish that was large enough to eat, so of course the small ones had to come and my seedling onions too. I caught him in the act, and proceeded to punish him with a small stick. He cawed and fought at the stick, with the feathers on his head standing upright; finally he flew up in the tree out of my reach; I suppose to think it over.

In my garden were two red Raspberry bushes, heavily laden with fruit just beginning to ripen, but they kept disappearing. I suspicioned Grip of being the thief, but could not catch him, although I watched him closely. As I was unwilling to divide the fruit with him, I placed a sheet over the bushes to protect them. Still they disappeared! One morning early I called Grip, no answer. I called again, this time louder, I could hear a faint caw, that seemed far away, I went toward the barn and called again. This time the answer led me toward the garden. I looked under the sheet, and there he was, the cute little rascal, with his mouth full of berries, caught with the goods. I had to acknowledge I was beaten and give him the rest of the berries. A ride on the pump handle seemed to give my Crow great pleasure also, he would slide up and down the handle as it was propelled, but if it was worked so fast that he fell off, then he proceeded to give the operator a good scolding. He would sit on a limb and practice talking, or it seemed that way, for he made all manner of queer sounds not unlike a Parrot. He enjoyed stealing corn from the pig. He would sit on the fence and wait patiently until the pig had shelled part of the corn, so it could be carried, then he would dive down, and in a twinkling of an eye he would be on a limb of a tree. If no one paid any attention to him, he would soon drop it, but if I pretended

Just a worm

to care, he would fly from tree to tree hanging on to the corn for dear life—for it was really hard to hold.

It is impossible to keep a Crow through the second Summer, they ignore their kind until the mating season arrives, then they seem to lose all interest in their human friends. A Crow never has any special place to roost. Grip used to frisk around until darkness was upon him, then wherever he happened to be, was his bed. One day a little girl came to my house who was so anxious to pet the Crow that I caught him. She was stroking his feathers and petting him, very much against his will. Such cawing and clawing, one would have thought he was really suffering. She held him close to her cheek and he gave her such a sharp peck she was glad to turn him loose. His anger was plainly evident as he sat on a limb preening and straightening his feathers. The next morning he failed to appear for his breakfast, nor did I ever see him again, his outraged dignity was no doubt more than he could stand.

My Winter Bird Visitors*

BY MARGARET WRIGHT, (Ohio)

1—The Cardinal

TO SOME birds as to some people is given both beauty and talent. The Cardinal is one of the handsomest birds and one of the finest singers.

The Cardinals have visited in our yard for several years. I do not know how many visit us, but have seen three pairs at one time. They have an even, sweet tempered disposition,—the Sparrows and other birds seem to like to be around them,—and I never saw the Cardinals do one selfish or mean thing.

Mr. Cardinal with his bright red suit is certainly a delight to the eye, when everything else is brown and sear, or against the white background of snow. Mrs. Cardinal's dress is modest compared to her husband's, being a brownish red, and the vest in some birds is almost gray. They both are always alert and their bright eyes seem to see everything. When a little excited their crests and tails are raised in a way which gives them a charming appearance.

I have watched them on a snowy morning clinging to a tall weed stalk, flying at the seed pods until they succeeded in knocking out a quantity of seed when they would fly to the ground to enjoy the fruits of their labor.

They are a little bit shy of humans, but soon learn to trust those about them. Sometimes they venture to our back door or window to pick up corn or crumbs. One morning as I went outside to empty a bucket of water, one Mr. Cardinal was sitting on a limb a few feet from the door, and he climbed to the far side of the tree stump and peeped over the top at me. He allowed me to empty the water almost at the foot of the stump without moving, and when I started away he came back to his place on the limb again. I was whistling all the time and I must have charmed him, for he sat perfectly still for at least a quarter of an hour and watched me as I was working around him. Usually those which come near the house are not still very long at a time.

They do not sing a great deal during the Winter; but in the Spring their clear, ringing warble song makes one feel proud to have so handsome, distinguished and talented bird for a guest.

2—The Chick-a-dee

I WAS delighted when I first heard what Thoreau calls the "silver tinkling" chick- a- dee- dee- dee- dee, chick- a- dee- dee- dee- dee r i n g i n g through the air. It announced the arrival of the Chick-a-dee to my feeding bush.

He proved to be a little body dressed in black and white, as some call it; but I call the coat dark gray; the vest white or light gray, with a black breast-pin and black cap. Very neat and dainty these birds look all the time.

There is no more lovable bird, always cheerful, always attractive; clinging to a branch one moment; hanging upside down another; always busy, flitting here and there. They visited the bush several times every day until February when they must have gone to the woods to raise their family.

One day when one of them seemed to be in an especially happy mood and had been singing its chick-a-dee-dee-dee-dee so merrily, I heard an especially sweet song and ran to the window thinking I was going to see a new bird; but I could see no other bird in sight and saw its throat moving so knew the song was coming from it. Swe-e-a, Swe-e-a, Sweet was the manner of the song, and it was truly musical.

The Chick-a-dee has the most winning confidence in man, allowing one almost to touch them before flying away. My feeding bush is only a few feet from the dining room window and from the kitchen door, and my head at the window or door never seemed to disturb them at all.

At first I would often see one eating at the same time the Downy Woodpecker was eating at the bush. But later it seemed to be afraid of the Downies and the Sparrows, and would leave whenever they came around. I did not wonder at it being afraid because of being so tiny, I guess if they hadn't seemed afraid the other birds would not have driven them away, although the Downies and Sparrows did try to frighten them, and perhaps they knew from past experience they were not to be trifled with.

The Chick-a-dee's bill while very tiny, must have great strength, for it uses it as a pick-axe and digs things out from the trees at a great rate. If you notice the bill carefully you will see that without being clumsy, it is very stout, for it is arched just enough to give it strength.

3—The Nuthatch

THE Nuthatch sometimes makes me think of a fly because of its ability to run along the underside of a branch, like a fly on a ceiling; and to follow his nose down the side of a tree like a fly on the side of a wall. Devil-down-head, he is sometimes called from this habit.

Again he makes me think of a fish because of the shape of his body. In certain positions on my feeding bush with his long bill and short tail, he looked very much like a fish. The Nuthatches are very active birds and never visited my bush for as long at a time as the Downy Woodpecker.

Mr. and Mrs. Nuthatch are dressed very much alike:—A coat of gray with markings of black, a white vest and a black cap. Being dressed so nearly alike and being so nearly one size, it is rather hard to distinguish at a distance which is Mr. or which is Mrs. Nuthatch, but when you see them close at hand, Mr. has a blacker cap than Mrs.; hers being not so glossy, and mixed with the bluish gray of her coat or dress.

They are called Nuthatches from the habit they have of wedging a nut or acorn in a crevice of the bark of a tree, and "hatching" it open with its sharp bill. Those visiting my bush seemed to like to pull a piece of suet or meat from the bush and carry it to a nearby tree, where they wedged it between the bark and would then proceed to eat. But if they could not get a large piece loose to carry away, they worked, oh, so hard and fast to eat as much as they could in a short time.

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*The Editor has asked me to add a description of my "Feeding Bush" and I am glad to do so. It is simply an Elder-berry bush which grows close to one of my dining room windows. I tie cord around a bone or piece of suet, and tie it to a limb of the bush or more often hang it from the limb, letting it hang down three or four inches so the Sparrows cannot very easily reach it; but being sure to have it far enough from the ground so the dogs and cats cannot reach it.

I also have a feeding tray made from a board or boards. It is about fifteen inches square, with strips nailed along the edges to keep the wheat, corn, bread crumbs, peanuts, or whatever I place on the board, from falling off the board. I tied a strong cord or rope to staples at each corner, and this tray I hang on a branch of a Peach tree which can be easily seen from my dining room window. I let the tray hang down about a foot from the limb of the tree.

4—The Downy Woodpeckers

THE Downy Woodpecker is more than half the size of a Robin. He has a coat of black and white check, which is open down the middle of the back showing light gray or white, the same color as his vest. On his head is the same black and white combination. If he is an adult male, a small scarlet patch on the back of his head sets off his black and white dress.

Like the Chick-a-dees and the Nuthatches, the Downy has the utmost confidence in man. They allow me almost to touch them before leaving the feeding bush.

At least two pairs visited my bush; for I saw that many on trees at one time, but never more than one bird ate at a time although there was room for several, for I tied the meat to several branches.

One would eat until satisfied which seemed to take a long time. I am sure I have seen one bird stay on the bush for at least an hour at one time. When satisfied another would often be waiting to take its place, I have seen one approach while another was eating, and the one on the bush would fly at the other and drive it away. I became almost provoked at their actions for they were at the bush so constantly and seemed to be so very selfish. I have seen them fly at the Chick-a-dee, Nuthatches, and Titmice, and drive them away.

The Tree Sparrows would sometimes come to the bush and could usually succeed in driving the Downy away; for they did not seem to be the least bit afraid, and several Sparrows would usually come to the assistance of their friend. Many an interesting battle did I witness between the Downys and the Sparrows.

I have often laughed at Mr. or Mrs. Downy bracing themselves with their tail on the bush. The tail will be at right angles with the body, and seems to serve as a hand in helping to hold them in a precarious position while digging with all their strength at the meat or suet.

5—The Tufted Titmouse

MRS. TITMOUSE looks a good deal like the Chick-a-dee, only a little larger; while Mr. Titmouse looks a great deal like Mrs. Titmouse, only larger than she. They both wear dark gray coats, light gray vests tinged with salmon near the wings, and have small crests, with a touch of black around the bill.

The ones which visited my bush seemed more shy than the Chick-a-dees. They do not have the ability to cling and climb like the Chick-a-dee, and could not enjoy picking at the suet and meat so well as the Nuthatches, Chick-a-dees and Downies.

One day I mixed some suet with flour, and placed it in a small box, and hung it on the bush. The Titmice were not long in discovering the mixture and took turns eating until they were satisfied. Then they sat on the branch of a near-by tree in sight of the window, and sang, and sang, very sweetly, with their heads held high and their crests showing so nicely. It seemed as though they appreciated our kindness and were doing their very best to thank us for the refreshment we had provided. We felt well repaid for the little time we had taken to prepare the repast.

How to Attract Birds

THERE is real fun in attracting the birds in Winter and Spring by feeding them. We need the birds and they need us. We often have hard snow-storms after the arrival of our spring birds, when they seek our homes for shelter and food. By feeding them at such times we can save many. They will more than repay you for any encouragement offered to them. See that suitable nesting places and accessible water are left them, or lacking these provide substitutes.

With the woods rapidly disappearing it will be well to plant in your yard a wild Cherry, Mountain Ash, Mulberry, Elderberry, Honeysuckle, or other wild berry-bearing bushes and trees. Birds love them and prefer them to the tame Cherry, Strawberry, Currant and tame berries. Provide them with the wild berry and they will not molest your garden.

Plant hedges and thickets around your farms and homes; they furnish shelter in Winter and favorable nesting sites in Summer; and will prove to be ornamental as well. Trees and attractive grounds not only set off a home, but greatly add to its value. For good business reasons, it pays in case one wishes to sell; and for aesthetic reasons if you don't.

Do not forget to give the birds shelter and feed during our stormy winter weather. If you have no trees make one by fastening sheaves of grain, cornstalks, or evergreen boughs to a pole. Then you can plant it in front of a window where it is easily seen, and endless pleasure may be derived from watching it for various bird visitors.

Suitable feed is found in the Sunflower, Hemp, Millet, Rolled Oats, a raw bone, bird-hash, (raw meat and waste birdseed), cracked corn, wheat, nut-meats, strings of peanuts, breadcrumbs, and last but not least, suet. The half-frozen birds will appreciate some cotton in their shelter-boxes and a pan of warm water.

The natural food found on shrubs and trees is hard for birds to find in this age of civilization, when "clearing the land" is the first thing that is done by the settlers, and it is becoming more and more a regrettable fact. If we wish to have birds, nothing attracts them as quickly as food they like; and it is up to us to replenish these trees and shrubs that have so rapidly disappeared by the ruthless ax.

I would suggest, in addition to those previously mentioned, High-bush Cranberry, Dog-wood, Juniper-berry, Barberry, Sumac, Holly-berry, Snowberry, Wild-rose, Box-elder, Shadbush, Viburnams, Choke-cherry, Juneberry, Bitter-sweet, Virginia Creeper, and Wild Grape vine. A Russian Mulberry has attracted as many as twenty-one various kinds of birds in Summer.

Sumac not only attracts many varieties of song birds, but larger birds like the Ruffled Grouse, Quail and Pheasant may be seen feeding on its berries.

If living near ponds or marshy land, wild rice may be planted. This would attract Ducks, Geese, Heron and other shore birds; Blackbirds and Bobolinks. Birds are a great blessing and benefit to mankind; then let us protect and provide for them to keep them with us. Birds soon find these favorable locations.

RENA BAUER, (Wis.)

A Shower Bath

Late one hot afternoon of the dry Summer of 1921, I was watering the shrubbery, when a little yellow Warbler spied the spray and in great excitement alighted on the fence nearby. Singing and flitting nearer and nearer, with many a doubtful pause, he finally came to the point on the fence nearest the spray. After several fluttering starts and frightened returns to the fence, he alighted on a large leaf full in the spray and commenced to bathe in frantic fashion. He bathed and bathed; only seeming satisfied when so wet he no longer looked like a little bird at all, and could barely fly back to his fence. He stayed for several minutes, singing and shaking himself, eyeing me in friendly fashion the while—and then he flew away.

ENID IVEY

How To Build Bird Houses

The U. S. Department of Agriculture, Washington, D. C., has Farmers Bulletin No. 609, "Bird Houses and How to Build Them," which can be had for the asking. It contains some very interesting details and suggestions to those who are interested in providing homes for the birds.

White Martin

It may interest you to know that I have one almost White Martin. I banded him in 1912, and he has returned each season since.

O. E. OLER, (Ind.)

The Gladiolus

Gladiolus Field Notes

Rating Values from Various Standpoints as Obtained by a New Percentage Scale

BY CHAS. E. F. GERSDORFF, Laurel, Md.

(Continued from April issue)

Electra (Hopman).* Brilliant light vermilion scarlet, throat lemon blotched rich scarlet. Form—wide triangular. Soil—clay loam. Season—average. Planted—April 28. Days to blooming—90.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	20
Size	14	15
Form	4	4
Substance cut	2	0
Spike:		
Length	3.5	3.5
Grace	5	3
Florescence:		
Number blooms	4	4
" " open	3	3
Placement	5	5
Foliage	5	5
Vigor	4 5	4.5
Disease resistance	5	5
Productiveness	3	3
Unusual quality:		
Color	2	
Totals	80.0	75.0
Ratings	80	75

Elf (Diener). Color (Ridgeway). Pale Massicot Yellow blending to bases of Citron Yellow; pistil Cream White; anthers edged Pale Lavender. Form—wide triangular, tips reflexing. Soil—gravelly loam. Season—wet. Planted—June 17. Days to blooming—80.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	18	20
Size	10	10
Form	5	5
Substance cut	9.5	9.5
Spike:		
Length	5	5
Grace	5	5
Florescence:		
Number blooms	5	5
" " open	3	4
Placement	5	5
Foliage	5	5
Vigor	5	5
Disease resistance	5	5
Productiveness	5	5
Unusual quality:		
Productiveness	1	
Bloom young corms		3
Totals	86.5	91.5
Ratings	87	92

Elisabeth Gerberding (Diener). Pale shell pink lightly flecked inside and out with deep rose; throat green striped crimson; bases of lower petals creamy yellow feathered and stippled carmine. Form—wide round, slightly ruffled. Soil—clay loam. Season—wet. Planted—May 18. Days to blooming—83.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	20
Size	12	13
Form	5	5
Substance cut	10	10
Spike:		
Length	3.5	4
Grace	3	5
Florescence:		
Number blooms	5	5
" " open	5	4
Placement	3	5
Foliage	4	4
Vigor	5	5
Disease resistance	5	5
Productiveness	4	4
Unusual quality:		
Color, number of blooms, placement	4	5
Totals	88.5	93.0
Ratings	89	93

Elizabeth Kurtz (Pfitzer). White with edges blended pale pink, lower petal bases lightly tinted yellow. Form—wide triangular. Soil—clay loam. Season—average. Planted—May 9. Days to blooming—102.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	
Size	11	
Form	4	
Substance cut	7.5	
Spike:		
Length	3.5	
Grace	5	
Florescence:		
Number blooms	4.5	
" " open	5	
Placement	5	
Foliage	4	
Vigor	5	
Disease resistance	5	
Productiveness	3	
Unusual quality:		
Color, number open	3	
Total	85 5	
Rating	86	

Elkhart (Kunderd). Deep cerise toned with lavender. Form—wide open. Soil—light loam. Season—wet. Planted—May 16. Days to blooming—103.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	20
Size	13	13.5
Form	5	5
Substance cut	10	10
Spike:		
Length	5	5
Grace	5	5
Florescence:		
Number blooms	5	5
" " open	5	3
Placement	5	5
Foliage	4	4
Vigor	5	5
Disease resistance	5	5
Productiveness	4	3
Unusual quality:		
Color, length of spike	5	
Length of spike		2
Totals	96.0	90.5
Ratings	96	91

Else Rose (Diener). Lavender pink blending to rose pink and then to white with creamy yellow throat; upper petals slightly flaked darker. Form—wide triangular. Soil—clay loam. Season—very dry. Planted—May 30. Days to blooming—104.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	20
Size	14.5	14.5
Form	5	5
Substance cut	10	10
Spike:		
Length	3	4
Grace	4	5
Florescence:		
Number blooms	5	5
" " open	5	4
Placement	3	5
Foliage	4	4
Vigor	5	5
Disease resistance	5	5
Productiveness	3	3
Unusual quality:		
Color	3	5
Totals	89.5	94.5
Ratings	90	95

Emilie Ashe (Diener). White tinged with cream, lower petals with small cerise blotches. Form—wide Orchid, ruffled. Soil—clay loam. Season—very dry. Planted—May 30. Days to blooming—102.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	20
Size	14.5	15
Form	5	5
Substance cut	10	10
Spike:		
Length	4	4
Grace	3	4
Florescence:		
Number blooms	5	5
" " open	5	4
Placement	3	5
Foliage	5	5
Vigor	5	5
Disease resistance	5	5
Productiveness	5	5
Unusual quality:		
Color, substance, number of blooms	4	4
Totals	93.5	96.0
Ratings	94	96

Empress of India (Velthuys). Very deep wine crimson shaded black on tips, and with maroon. Form—wide open. Soil—light loam. Season—dry. Planted—May 5. Days to blooming—81. Season—wet. Planted—May 13. Days to blooming—73. Season—very dry. Planted—May 30. Days to blooming—93.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	20
Size	10	11
Form	5	5
Substance cut	10	10
Spike:		
Length	3	4
Grace	3	4
Florescence:		
Number blooms	4	4
" " open	5	3
Placement	3	4
Foliage	3	3
Vigor	4	4
Disease resistance	5	5
Productiveness	5	5
Unusual quality:		
Color	2	2
Totals	82.0	84.0
Ratings	82	84

Enchantress (Hopman).* Pastel violet, the inner petals darker, the lower penciled amaranth red on bases. Form—wide triangular. Soil—light loam. Season—wet. Planted—May 6. Days to blooming—74.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	
Size	11.5	
Form	4	
Substance cut	5	
Spike:		
Length	3	
Grace	5	
Florescence:		
Number blooms	5	
" " open	4	
Placement	5	
Foliage	3	
Vigor	4	
Disease resistance	5	
Productiveness	2	
Unusual quality:		
Color	2	
Total	78.5	
Rating	79	

Enchantress (Miller). Cream white with pale rosy flakes giving creamy blush effect; midribs on upper petals lighter and those on lowers purplish rose. Throat stippled deep cream yellow and purplish rose. Form—wide Orchid. Soil—clay loam. Season—wet. Planted—May 10. Days to blooming—86.

RATING

	VALUES PER CENT Exhibition	Commercial
Flower:		
Color	20	20
Size	11	11.5

Form	5	5
Substance cut	9	9
Spike:		
Length	2.5	3
Grace	5	5
Florescence:		
Number blooms	5	5
" " open	4	5
Placement	5	5
Foliage	3	2
Vigor	4	4
Disease resistance	5	5
Productiveness	3	3
Unusual quality:		
Color	2	4
Totals	83.5	86.5
Ratings	84	87

Enchantress (Vaughan). Flesh white splashed on edges with rose pink, deeper outside; lower petals blotched burnt orange with medial line of brilliant carmine-scarlet. Throat marked crimson and starred carmine. Form—wide triangular. Soil—clay loam. Season—wet. Planted—May 18. Days to blooming—78.

RATING

Flower:	Exhibition	Commercial
Color	20	20
Size	10	10.5
Form	5	5
Substance cut	10	10
Spike:		
Length	2	3
Grace	4	5
Florescence:		
Number blooms	5	5
" " open	3	4
Placement	3	5
Foliage	4	4
Vigor	4	4
Disease resistance	5	5
Productiveness	4	3
Unusual quality:		
Color	1	
Color, earliness		2
Totals	80.0	85.5
Ratings	80	86

Epicure (Vaughan).† White slightly feathered with lilac. Form—wide open. Soil—light loam. Season—wet. Planted—May 15. Days to blooming—97.

RATING

Flower:	Exhibition	Commercial
Color	20	
Size	15	
Form	5	
Substance cut	10	
Spike:		
Length	4.5	
Grace	3	
Florescence:		
Number blooms	3	
" " open	4	
Placement	4	
Foliage	4	
Vigor	5	
Disease resistance	5	
Productiveness	3	
Unusual quality:		
Color	2	
Total	87.5	
Rating	88	

Eric Larson (Metzner). Color (Ridgeway). Mallow Purple, tips slightly flecked Rhodamine Purple; bases of lower petals Cream Color blotched velvety Rhodamine Purple; pistil Mallow Pink; anthers Pale Mallow Pink. Form—wide Orchid. Soil—gravelly loam. Season—wet. Planted—June 18. Days to blooming—78.

RATING

Flower:	Exhibition	Commercial
Color	20	20
Size	11	11
Form	5	5
Substance cut	8	8
Spike:		
Length	4	4.5
Grace	5	5
Florescence:		
Number blooms	3.5	3.5
" " open	5	5
Placement	4	5
Foliage	4	3
Vigor	3.5	3
Disease resistance	4	4
Productiveness	3	2
Unusual quality:		
Color, number open	4	
Color		2
Totals	84.0	81.0
Ratings	84	81

Eros (Vos). Color (Ridgeway). White blending to Shell Pink, lower petals Shell Pink blending to bases of Straw Yellow lined and stippled Amaranth Purple; pistil Rose Pink; anthers Deep Violet. Form—wide triangular. Soil—gravelly loam. Season—wet. Planted—June 18. Days to blooming—80.

RATING

Flower:	Exhibition	Commercial
Color	19	19
Size	13.5	13.5
Form	5	5
Substance cut	7.5	7.5
Spike:		
Length	5	5
Grace	5	5
Florescence:		
Number blooms	5	5
" " open	3	4
Placement	5	5
Foliage	4	3
Vigor	5	5
Disease resistance	4.5	4.5
Productiveness	3	2
Unusual quality:		
Bloom from small corms		3
Totals	84.5	86.5
Ratings	85	87

Erwin Mayer (Pfitzer).* Ox-blood red, shaded deeper, and heavily feathered; small white throat. Form—wide triangular. Soil—clay loam. Season—average. Planted—May 10. Days to blooming—103.

RATING

Flower:	Exhibition	Commercial
Color	20	
Size	15	
Form	4	
Substance cut	10	
Spike:		
Length	4.5	
Grace	5	
Florescence:		
Number blooms	3	
" " open	3	
Placement	5	
Foliage	4	
Vigor	5	
Disease resistance	5	
Productiveness	3	
Unusual quality:		
Size, substance	1.5	
Total	88.0	
Rating	88	

Escarboucle (Kelway).† Dark carmine crimson with pure white band and blood red blotch on lower petals. Form—wide open. Soil—light loam. Season—wet. Planted—May 10. Days to blooming—91.

RATING

Flower:	Exhibition	Commercial
Color	20	
Size	10	
Form	5	
Substance cut	8	
Spike:		
Length	3.5	
Grace	3	
Florescence:		
Number blooms	4	
" " open	4	
Placement	4	
Foliage	4	
Vigor	5	
Disease resistance	5	
Productiveness	3	
Unusual quality:		
Color	3	
Total	81.5	
Rating	82	

Etendard (Lemoine).† Color (Ridgeway). Pale Chalcedony Yellow blended on tips and center outside with Light Begonia Rose and Eosine Pink; lower petals Light Chalcedony Yellow heavily blotched Carmine with center of Ox-blood Red; pistil and anthers Pale Hermosa Pink. Form—wide triangular. Soil—sandy loam. Season—wet. Planted—June 16. Days to blooming—85.

RATING

Flower:	Exhibition	Commercial
Color	20	18
Size	13	13
Form	5	5
Substance cut	8.5	8.5
Spike:		
Length	3	3
Grace	5	5
Florescence:		
Number blooms	5	5
" " open	3	4
Placement	5	5
Foliage	5	3
Vigor	4	4
Disease resistance	5	5
Productiveness	4	3
Unusual quality:		
Color, branching	3	
Totals	88.5	81.5
Ratings	89	82

Ethel Wardwell (Alexander). Scarlet Vermilion striped and stippled in and out with scarlet and white; lower petals toward throat bearing heavier stripes of blood red to a blood red throat; pistil scarlet; anthers violet and red with light scarlet stems. Form—wide triangular. Soil—light loam. Season—wet. Planted—May 18. Days to blooming—84 to 92 (small corm).

RATING

Flower:	Exhibition	Commercial
Color	20	
Size	10.5	
Form	5	
Substance cut	10	
Spike:		
Length	3	
Grace	3	
Florescence:		
Number blooms	4	
" " open	4	
Placement	3.5	
Foliage	3	
Vigor	4	
Disease resistance	5	
Productiveness	4	
Unusual quality:		
Color, number of spikes	5	
Total	84.0	
Rating	84	

Etta Davis (Metzner). Color (Ridgeway). True Purple, bases Cream Color with stippled and lined blotch of Aster Purple with central line of Ox-blood Red. Pistil true Purple; anthers Pale Pinkish Lilac edged Blackish Violet. Form—wide Amaryllis up-facing. Soil—sandy loam. Season—wet. Planted—June 18. Days to blooming—62.

RATING

Flower:	Exhibition	Commercial
Color	20	20
Size	10	10
Form	5	5
Substance cut	10	10
Spike:		
Length	4	4
Grace	5	5
Florescence:		
Number blooms	3	3
" " open	2	1
Placement	5	0
Foliage	4	3
Vigor	4	4
Disease resistance	5	5
Productiveness	5	5
Unusual quality:		
Facing of blooms, color	5	
Earliness		3
Totals	87	78
Ratings	87	78

Eucharis (Souchet-Vilmorin). White faintly tinged with blush, lower petal bases sulphur yellow with small lines of vermilion pink. Form—wide Amaryllis. Soil—clay loam. Season—wet. Planted—May 8. Days to blooming—95.

RATING

Flower:	Exhibition	Commercial
Color	20	
Size	11.5	
Form	5	
Substance cut	7.5	
Spike:		
Length	3	
Grace	5	
Florescence:		
Number blooms	5	
" " open	3	
Placement	5	
Foliage	3	
Vigor	4	
Disease resistance	5	
Productiveness	2	
Unusual quality:		
Color	2	
Total	81.0	
Rating	81	

(*Continued in June issue*)

Belated Gladioli

LAST year a box of Gladiolus bulbs went astray among expressmen and did not reach us until it seemed too late to plant them. The sunny beds where we had hoped to grow them were filled then with other things and the soil was so dry that we knew the bulbs might be several weeks in starting.

On the north side of the house, but not entirely in the shade, there was a bed of Dwarf Rhododendrons that we had planned to brighten with Lilies. Evidently these meant to disappoint us; their spindling stems promised little bloom. So we concluded to try the effect of Gladioli against a background of dark Rhododendron leaves. Carefully, without uprooting the Lilies, we tucked the shriveled Gladiolus bulbs deep into the moist, half-shaded soil, and drew the mulch back over all.

"Blessed are they who expect little," quoted an unbeliever, "but it is better than throwing the Gladioli away. If they do not decay we can transplant them to a better place next year."

A hot dry Summer followed this late June planting. It was mid-September before we had much rain. But the Gladioli responded to the unusual conditions given them. Early in September they began to bloom and the effect of their rich flowers among the Rhododendrons was almost startling. The flower-stems were more slender than those of bulbs planted early, and the coloring not quite so rich, but we felt well repaid for the experiment. Cardinal flowers are better suited to Rhododendron beds, and almost as effective as Gladioli.

The Gladiolus is too often planted in stiff, single rows, the bloom stems supported by wires or stakes. We have tried various ways of arranging them that we like better. In one long border we have them growing with Iris. The latter blooms first, so that there are no crude color contrasts and the stiff Iris foliage helps to support the top-heavy Gladiolus stems. Another good way is to use them for brightening through Summer the rich foliage of late-flowering plants like the Chrysanthemums and Japanese Anemone.

L. GREENLEE, (N. Car.)

Increasing the Interest in "Glads"

EVERY year in my own town I have a large increase in trade in dozen lots at 50 cents and 75 cents per dozen. Almost all my orders are for the 75 cent mixture. Of course this calls for only the commercial varieties, like *America, Hulot, Pendleton, Watt, War, Schwaben, Lilywhite* and others, and one or two gratis. So I thought if I put them out for the Boy and Girl Scouts to sell I could dispose of many more that way as people would buy of The Scouts, and plant and get interested in them, that would buy no other way. You know The Scouts do a great many things to earn money, (or they do in this town,) to pay their expenses when they go on long hikes, and in this town they have erected a building that has to be paid for so they have to raise large sums of money to meet their payments.

The bulbs could be put up to sell for 75 cents and give The Scouts 25 cents for every dozen sold. I put all my bulbs in cheap egg boxes, and most all are second size. My idea was that if this could be done everywhere and everyone would charge a fair price, I mean a reasonable price like 75 cents, that it would clean up an enormous amount of bulbs all over the country and *America* wouldn't sell for $10.00 per thousand and more people would get interested in the business, and the better kinds would still be advertised in your paper, and if some of the growers' surplus could be sold that way, wholesale prices would go up and the growers would be more independent and prosperous.

MRS. MARION LEARY, (Mass.)

Gladioli with Other Flowers

The matter of hilling up Gladioli seems rather odd to me; as, certainly, I have never made any conscious effort to do so, although I have raised a good many thousands, both in rows and in beds.

As for using the Gladiolus in the mixed border, from the experience of customers, friends, and of my own, I have learned that the Gladiolus is very sensitive to the presence of other plants, particularly perennials; and when planted in among them, either fails to bloom, or throws weak spikes.

The successful way to use the Gladiolus in the border, I have found, is to give it space all its own in the front of the bed where it cannot be shaded. Planted in this manner; the bulbs massed four inches apart, it makes a very pretty show, in bloom or out, until the leaves begin to turn brown. The mass of green sword-like leaves is ornamental in itself and there is no need for ground covering.

Herewith is a rough sketch of a bed I had in bloom this Summer. Some three hundred bulbs were used in this planting. This same idea can be carried out on a smaller scale.

FRED L. DELKIN

Blooming of Extra Large Gladiolus Bulbs

In answering a question in THE FLOWER GROWER about a year ago you made some suggestions about the non-blooming of extra large bulbs of Gladioli.

My explanation would suggest that these bulbs may have been two-year-old, large but stunted bulbs.

Our experience is that our mammoth bulbs, or "Overs", grown by high cultivation in one year, from number three or number four bulbs, will uniformly produce large and fine spikes of bloom. Nearly all fine specimens of garden products need good soil, fertilizer, cultivation, and moisture. Given these, the bulbs produced will be healthy and will flower well. Stunted bulbs are like stunted radishes, of no value.

C. V. R.

NOTE BY THE EDITOR:

C. V. R. is quite right that very large bulbs grown from small bulbs in one year will uniformly produce fine results, but the suggestion to E. W. S. was with reference to large bulbs of quite a different character. Large *old* bulbs are quite different than large *young* bulbs, as every Gladiolus grower knows. Commercial growers do not know anything about large *old* bulbs, generally speaking, as they dispose of their crop each year and do not plant any old bulbs. Therefore, it would seem that both C. V. R. is right, and also the answer to E. W. S. as originally given.

"Corn-fed" Gladiolus Bulbs

It has never been my luck to get that kind as small ones go cheaper by mail. Some *Golden Glory* that I have been growing for several years are two and a half inches in diameter and the bloom was large and strong, and the growth and increase was good. I have Gladiolus bulbs four inches in diameter, and they always produce two, and sometimes three bulbs as large as the one planted.

A. W. DE LONG, (Conn.)

EDITOR'S NOTE:

The "Corn-fed" Gladiolus bulbs referred to are what have been called "over-grown" bulbs. Numerous growers have had the same results from certain varieties of Gladioli, and it has been demonstrated in numerous cases that bulbs of large size may be worthless for fine flowers. Perhaps someone can tell of comparative tests along this line. Isolated results are not conclusive.

"Topping" Gladiolus Bulbs

I notice that some growers of Glads, giving directions about digging, advise leaving on the tops after digging until they are dry. But all the growers I know remove the tops immediately, while they are still brittle, and, besides saving a good deal of time, they have just as good bulbs as anyone else.

We have an impression that all the tops do is to draw out and throw away some of the moisture, and that they add nothing to the bulbs. It has seemed to us that the main thing is to see that the bulbs are well dried and cured. I do not claim that the topped bulbs are better but I am sure they are just as good.

GEO. S. WOODRUFF

Dry Soil for Crape Myrtle

BY ROBERT SPARKS WALKER

CRAPE Myrtle is one of the old-fashioned blossoming shrubs that has been growing in popularity for many years. It is not difficult to succeed in growing Crape Myrtle and this very fact has caused some horticultural writers to make the rather careless statement that no special requirements are necessary for growing it successfully.

This Crape Myrtle stands only ten feet from those which did not bloom, but its roots were in well drained soil.

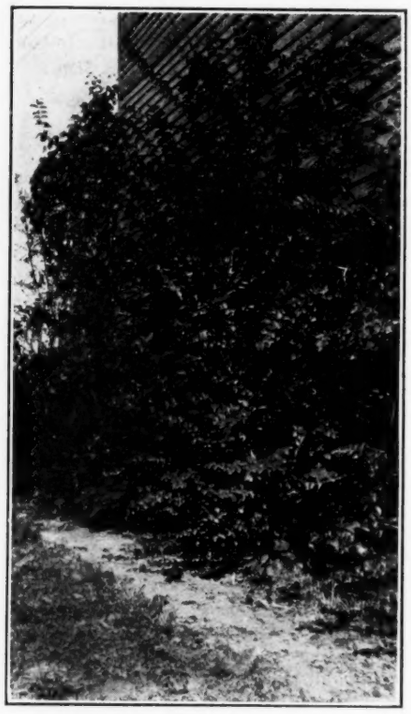
Fifteen years ago I planted six Crape Myrtle shrubs in a single row on the south side of my lawn. They made their normal growths in due time and soon three of them began to bloom profusely. Two of them were white; two deep pink; and two pale pink. Year by year half of them continued to bloom, and since Crape Myrtle produces flowers on new wood growths, I kept them properly pruned to induce a profusion of flowers.

Just why half of my shrubs should continue to bloom while the other half remained in an indifferent blooming mood opened up before me a perplexing problem which at first baffled solution, and in fact I wrestled with the perplexing situation so long that it almost became a mystery to me.

I had many varieties of wild flowers growing among the Crape Myrtle bushes, and halfway in the row, I had a water connection. Near the faucet were planted Calamus, Peppermint, three kinds of Cyperus, or true Sedges, and three species of Basket Willows. Since these plants like moisture, there was a constant dripping of water from the leaky faucet which kept their wants well supplied.

For seven years the Crape Myrtle bushes continued to thus behave; half blooming and the other half not even forming flower buds. There could be no difference observed between the growths of the bloomers and non-bloomers.

A freeze during the Winter of the eighth year necessitated the attention of a plumber on the part of the pipe where the faucet had been leaking for years among the Crape Myrtle bushes. When the workman had finished the job, there was no more water dripping and the ground became very dry. The following Spring the three Crape Myrtle bushes which had been barren of flowers in previous years joined their brother plants and produced a gorgeous supply of flowers. The second and third year they kept up their blooming record, and then permission was given the washer-woman to connect her hose among them, and once each week she used a considerable amount of water. Of course a great deal of it goes to waste at the faucet and the moisture was restored.



In this row grow the six Crape Myrtle shrubs; the three at the farther end are good bloomers; the others refuse to bloom when water is permitted to reach them.

Immediately the following Spring the same three shrubs refused absolutely to bloom, and they have never bloomed since. Those shrubs which have been growing on the slightly higher ground in the same soil above them, have never missed blooming a single year.

This experience and observation which covers a period of fifteen years proves conclusively that the person who wishes to make a success of Crape Myrtle must see to it that it is set in well drained soil, and that it is kept from an excessive amount of moisture.

The Flower-Spider

You must have noticed them in the centre of a flower,—a small, crab-shaped, white or yellow Spider. Like many things in nature with a protective coloring, the Flower-spider is white in a white flower, and yellow in a yellow flower; but this is not always the case.

They may be frequently found, especially in wild flowers, and go unnoticed in a bouquet, until the certain flower containing it is suddenly touched, when out comes the disturbed Spider. The Flower-spider has a flat body, broader behind than its small front part, where the eight broadly arched legs are attached. It resembles a crab in its habit of running sideways. Their purpose of hiding within a flower is to be on deck for Butterflies and insects that visit the flower. They suck out their life-blood for food, and often the dead Butterfly is found still clinging to the flower.

RENA BAUER, (Wis.)

Wiring Flowers

Many people have a dislike to wiring flowers, but in art floral work it becomes an absolute necessity. The flowers have to take certain angles to suit various styles of work in which they are to take their places, and, moreover, many of the varieties of Carnations, Roses, Dahlias, etc., have exquisite blooms with stems quite unable to support them. To exhibit their beauty in any work, it becomes necessary to wire them. When wiring flowers it should always be borne in mind that different size wire is required according to the amount of support needed. Too heavy wire on a flower is almost worse than none.

To wire a flower, hold the bloom firmly at the base of the petals, push wire through far enough to bend over and twist round stem. Azaleas, Pansies, and Violets need the finest wire first. This wire can be twisted onto another a little stronger, to form stems.

To wire Daffodils, push one end of the wire through the seed box, and bend over neatly. Carry the other end down the stem and twist round, finishing off neatly. Carnations, Roses and Dahlias are wired the same way.

Wiring should be done as neatly and firmly as possible, and the flowers should be arranged so that the wires are as little visible as possible. Try to hide them by careful disposal of foliage, or the placing of another bloom in a position that will cover the wired stem.—*Home Gardener*, (Australia)

The Utica Garden Club

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Editorial Notes

A LETTER has been received from a gentleman in Connecticut, in response to an inquiry for the name of a house plant, (page 128, March issue). He says that the plant seems to be fairly well distributed as a window plant around New Haven. He names two people who have it under different names, one calling it a "Sword Plant" and the other a "Brazilian Iris." Best of all he says, "Your inquiry has set me guessing and I shall try to run down the *real* name. Some one at Yale or the State Experiment Station ought to be able to help us out."

People in general do not half realize the value of such sources of information. Just how many states have Experiment Stations we do not know, but probably most, if not all, of them. Then there is always the Department of Agriculture at Washington. Nearly every state has a State University with a department under which plant and animal life is studied. These are all reliable sources of information and we have found our own in New York State very ready to help in solving knotty questions. Others are undoubtedly just as willing. *Try them.*

During the Winter the rough bark on one of our bird houses, (an Audubon one made to imitate the natural hole in a tree,) loosened and finally slipped off. To our amazement the house thus uncovered was discovered harboring any quantity of cocoons. It is doubtful if the bark will be replaced. It seems safer to stain the house the color of the bark and thus leave no place for caterpillars to crawl under and weave their cocoons in safety. Better have a look at your bird houses, fellow gardeners.

Some plants are apparently able to endure almost any amount of exposure. The past Winter was a strange one as it presented such extremes and made the changes so rapidly. The month of February especially kept every one guessing, 20 to 40 degrees below zero one hour, followed by more snow than even the *grandfather* of the "oldest inhabitant" ever conceived of. Naturally it was predicted that it would take weeks if not months to melt it all, but it vanished almost in the twinkling of an eye. February 25, to our amazement one of the Peonies was discovered with sprouts nearly two inches high. An inch or two of snow fell and then came more severe cold, hovering around zero. Fears were entertained for the Peony, but it has survived as though it had not poked up its many noses too soon. It is too early to say any thing about its blossoming. But long as it has not minded what has gone by, there seems no reason for supposing that it will not flower as well as usual.

A strange mixture of flowers came early in March during an unnaturally warm spell; Crocuses and Snowdrops, of course, as they are always ready to pop up with a few days of warm sunshine. Christmas Roses bloomed nearly all the month, starting as soon as the snowy blanket slipped away from their knoll. Apparently the buds had formed under the snow as the plants were young and did not flower in the Fall. Several other gardeners reported their Christmas Roses in bloom in March, but strangest report of all was that little English Daisies were in flower. Who ever heard before of English Daisies and Snowdrops coming together? Surely February and March, 1925, will never be forgotten in this section. Even Red Maples displayed their tiny but showy blossoms.

Useful Hints for May

THE month of all months for gardeners in this part of the country is with us again. Ever since the garden was tucked up for its long winter rest gardeners have had their thoughts turned toward May, the goal of another season's efforts. Now that it is here there is so much to fill every second of daylight that one must have a pretty well-made-out schedule of work, not to become bewildered and forget which things ought to come first. The amateur with many duties other than garden especially needs such careful planning. The family must be fed; the house cleaned; summer clothes made; all in the month of May; unless one wishes to swelter in the heat of June and July. Of course much should have been done in the sewing line in March and April. Some get the cleaning done too, but it is much more satisfactory after fires are out and the accompanying dust from shoveling coal and ashes no more to be contended with. That miserable aftermath of the war, soft coal, leaves everything in a deplorable state.

With all the spading, planting, and sowing, do not forget that the warm days of May will revive insect life too, and spraying should be one of the first things attended to. Spirea Vanhouttei is sure to be covered with aphis by the time it is through blooming unless well sprayed with some form of Nicotine. Disease may also be forestalled if preventative sprays are used, even before the leaves appear. The successful gardener will have few idle moments nowadays.

If we could only keep the resolution probably made last Fall not to attempt so much, and not to order everything that sounds or looks inviting in the catalogues, regardless of available space or possible time for their care. If we could but be firm enough to attempt less and do better. Every pretty plant is so alluring!

Practically everything should be started this month, unless intended for a second crop. The first half of the month sow the more hardy varieties;—Pansies, Poppies, Candytuft, etc., among flowers; Lettuce, Radishes, Carrots, Parsley, Early Peas and the like among vegetables. By the twentieth it will be safe for the tenderest things. About Memorial Day is a good time for setting out Tomatoes, Peppers, Egg Plant, Asters, and all of the other potted plants. A week earlier may be safe, but there is no guaranty that a late frost will not put in its appearance. The ground is so much warmer the latter part of the month that germination takes place more quickly and speedier

THE UTICA GARDEN CLUB—*Continued*

growth is made, so that it is very doubtful if much, or any, time is saved by early planting for anything but the most hardy varieties.

This is the month of Iris. Any garden can be beautiful all through May with this family alone; there are so many fine varieties, flowering at different times, that a wonderful succession can be obtained. What is more beautiful than choice Iris, (not necessarily expensive ones,) and what of so little attractiveness than poor varieties? No garden can afford to lack some fine ones.

After blooming is the best time for separating them, and it is wise at the same time to watch out for borers and crown rot. All affected spots must be removed as thoroughly as a surgeon would remove infected parts in a human being.

Do not forget that perennials should be started now, if to be raised from seed. Some people think that any time up to August will do. Seedlings from late sowing do not have time to grow large and strong before September when they should be transferred to permanent quarters. Such plants easily winter-kill. Sown in May, the same as annuals, they will be strong healthy plants by Fall.

Above everything make a desperate effort to get ahead of the weeds. Perennial weeds are especially hard to exterminate if they get a good "root hold." Keep at them early and late. It is so easy to get discouraged and give up to them if they are not conquered early. "Conquered"? Well not quite. Like one's sins, they are always trying to get a fresh hold. However they are good for developing "stick-to-it-iveness." Perhaps the *"raison d'etre"* for weeds is to aid in developing character in gardeners. Nothing to contend with produces weaklings.

In setting out bedding plants *do not forget* that, like children, they will grow. It is hard to realize that a plant which requires but a few inches of space in May will need two or three feet in September. This is one of the hardest things for a new gardener to keep in mind. Even old ones constantly offend.

Try out some new color schemes this Spring,—do a little experimenting. Anything is better than too much copying the suggestions of others.

Do not let your garden work keep you from at least one trip to the woods to see Mother Nature's garden. She may spare you a few plants to take home to your own, for a shady nook. There is no cultivated garden, no matter how beautiful, that can afford quite the pleasure of seeing the wild flowers in their native haunts. May is the month of months for this trip.

The Dividing of Perennials

BY MRS. E. W. RUBEN

ALMOST all, if not all perennials, ought to be divided from time to time, not only for the sake of the increase, but for the sake of more and better bloom. How often have we seen a friend (and have ourselves) take a spade and cut off a part of some clump of a choice perennial to give away, hurting not only the part left in the ground but also the part given away, whereas, if the whole plant had been lifted, (at the proper time of course,) carefully divided, and reset; a clump surprisingly larger for ourselves and also for our friend would have resulted.

Early Spring is considered the best time to divide and reset perennials, but I like early Fall better as then one has more time, and plants cannot be divided hurriedly and make a good job of it. One exception to spring division is the Peony. It simply will not bloom if divided at that time or even moved. But in early September, at a then dormant stage, one can safely do so.

One Spring I carefully lifted and took to an already prepared place, a clump of Peonies and lost that year's bloom. In September I chopped a clump in four pieces, reset one piece, gave away two, and seemed to have no place for the fourth piece. It was rather a poor variety but, after it had been left out of the ground for three days, I finally found a spot and set it out. The following Spring it bloomed. So much from my experience as to the best time to divide Peonies.

Most other perennials can be divided just as well in the early Spring; as then you have weather conditions in your favor to offset the probable lack of time. The Iris is perhaps the one plant for which even the most inexperienced gardener can tell the need of division; with Gaillardia a close second. After a clump of Iris has been growing for three or four years, you will see in the middle and perhaps other parts of the clump large parts of fleshy root raised far above some of the others, and sometimes right on top of them, without so much as a small leaf on it. This part of the rhizome, as it is called, will never bloom; and should, by dividing the clump, be removed. Carefully dig out the whole plant, spade up the place, and add a great deal of lime. Iris just love lime. Untangle the thick feeding roots and you will have a surprising number of new plants. If you want as large a clump of any of the perennials in the spot they were taken up from; dig over and enrich the place thoroughly, and reset the new plants, leaving room for growth. Probably not more than half of the clump can be reset; leaving the rest for other places, or for friends.

It is by this division of perennials that one can indulge in the pleasure of giving to garden friends, which is indeed one of the joys a real gardener always feels.

The Gaillardia acts just opposite to the Iris when in need of division. Instead of bare spaces in the center of the plant you will find the healthiest looking foliage you ever saw, but perhaps only one or two flower stalks. After digging up the plant you can easily see little new plants just barely attached to the main root, and each one carefully broken off is a plant by itself. I cannot say enough about being careful when dividing your clumps, and here is where you simply have to take time, for what you otherwise gain in proper division, is so often offset by rough handling. The Gaillardia, although perhaps forming fifteen new plants on the parent root, is so easily broken, that unless you work very slowly, you are apt to get two or three without enough roots to live.

Unlike the Gaillardia, as far as root system is concerned, are the Bleeding-Heart (Dicentra) and Anchusa. Both have fleshy, brittle roots; and each piece of root, no matter how small, will send up shoots, that in time will form good sized plants. I found this out by accident. When I was digging up a large clump of Bleeding Heart the roots broke up into small pieces. Thinking that the smallest bits were of no account I put them off in a place by themselves. In an incredibly short time I noticed little sprouts coming from them. Now I am careful to save each piece that breaks off.

Delphinium and Phlox have nearly the same root stock,—a fibrous mat,—and you need a sharp square spade, or a corn knife to chop them up. Here, too, you will notice some useless roots, hard, strawy looking pieces. These are best picked out with a careful hand so as not to break the fresh feeding roots.

Always use plenty of well rotted manure before resetting. One reason for dividing is because the plants have used up what nourishment they were able to obtain from the ground and are thus unable to bloom as they ought. After moving, be sure to keep

THE UTICA GARDEN CLUB—*Continued*

the plants well watered if nature fails to save you the trouble. Keep them reasonably moist until you see that the roots have taken hold of the soil and are helping themselves.

Sometimes you will find, after watching a clump of a certain plant for a season or so, that it does not seem either to grow larger or bloom as it ought. You think it surely is not large enough to need separating; but upon digging it up, at the proper season, you will see a strange thing. The old root had, at some time or other, been attacked by a grub or worm of some kind, which left without killing the plant. The poor thing is trying its best to live by making fine new roots; and also using part of its strength to heal over the injured parts. If you will cut out the damaged parts of the root and give the plant an extra amount of plant food, it will be but a short time before it will pick up, grow, and bloom; perhaps better than ever. If not attended to it would probably have gradually dwindled away, lacking strength to both heal up the old hurts and produce new healthy roots.

So you can go through the whole garden, finding a clump here and another there, that will be benefited by dividing and resetting. Always remember that if dividing is done in the Spring it should be done as soon as the first shoots appear and are up enough to tell what and where the plant is. Later on the plant will receive such a set-back through wilting of the foliage that it will often take a good share of the season to recover.

Some Interesting Discoveries in Plant Life

PLANTS breathe with their feet as well as with their heads, and there is enough oxygen in good garden soil for their needs. These are discoveries of Prof. Burton E. Livingston, of the Johns Hopkins University, and Dr. Lee M. Hutchins, of the United States Department of Agriculture, Washington, working in the former's laboratory of plant physiology in Baltimore.

Earlier work by these men and by other scientists had already established the fact that plants must get their oxygen through their roots as well as through their leaves, and that air taken in through the top of the plant does the roots little or no good in most species. It has, of course, been long observed that many kinds of plants "drown" when they stand for a considerable period of time in flooded land, even though their tops may be above the water. This "drowning" of a plant is exactly like the drowning of a man; both die of suffocation, or lack of oxygen. That the plant has its head above water does it no good; it has no lungs or circulatory system to pass the air down to its roots, and if they cannot get oxygen from the soil they cannot get it at all.

Livingston and Hutchins then proceeded to develop a most ingenious method for measuring how much oxygen the soil can supply in a given time. A cone-shaped filter of thin porous porcelain is sunk into the soil to be studied, and allowed to remain until the earth settles around it. Then nitrogen, from which the last trace of oxygen has been extracted, is fed slowly through from a storage tank, and as it passes out again is run through a sikyta solution of pyrogallol, a chemical that turns brown in the presence of oxygen, and can be used to measure the amount that has come in through the walls of the filter.

By this method it was found that three factors influence the rate at which oxygen can pass through the soil to the roots of plants. Tightly packed soils can supply little oxygen, while well cultivated soils pass it through easily. The rate of supply alone depends on the amount of water present; the more nearly water-logged the soil, the lower the rate of oxygen movement. Finally, the deeper the soil level the slower is the rate of supply.

The natural distribution of plants is governed, at least in part, by the amount of oxygen their roots need. Plants of wet habitats, like Rice, Willows and Cattails, require little oxygen for their roots; Corn, Potatoes and other crops of well cultivated lands require a great deal. Ordinary forest trees for the most part occupy an intermediate position. It is expected that the new method will in time yield data of great value in botany, agriculture and forestry.

(*Utica Daily Press*)

The Bird of Spring

When June's brightest songster floats
  Out on the ambient air,
Are his proud, full-throated notes
  Half so sweet, or half so fair,
As when, some misty morning,
  Soft and low, begins to sing
Without a note of warning,
  The dear, first Bluebird of Spring?

The trees are brown and leafless,
  Yet some faint prescience shows
That the fields, now bare and sheafless,
  Soon will stand in golden rows;
Still, snowy patches linger,
  But they cannot daunt the wing,
Nor frosts with icy finger
  Hold back this brave bird of Spring.

Summer's bird may be golden,
  And lute-like his mellow throat,
Yet our hearts are not holden
  As by the soft fluting note
Of this feathered pioneer,
  Who so boldly spreads his wing,
Bringing us a song to cheer—
  Dear, courageous bird of Spring!

Summer's birds too soon depart,
  Like our joys they pass away;
But, type of the truthful heart—
  Constant till its latest day—
With heaven's faith in his breast,
  The sky's azure on his wing,
What can soothe the soul's unrest
  Like this first, sweet bird of Spring?

ADA MARIE PECK

Plants for Porch

THIS year is my first attempt at filling porch boxes and tubs from material at hand, instead of from the florists or market flower stands' wares; and I am sure I have had more comment and surprise expressed for the showing, than I ever had from the usual array of plants, and the few variations seen in boxes.

In the Fall I cut down my Fuchsias and set pots into the cellar. When brought out in the Spring they soon grew into clumpy compact plants. For my porch I happened to look on the Fuchsias and said, "Why not?" The larger ones I divided so had enough plants of three varieties (do not know names) of singles, red with purple center; white, with red centers; and one or more of a bell-shaped or flared center, that is two shades of rose-pink, to put into three long boxes and six of the Japanese Soya tubs.

In two of the boxes I set a rose-scented and a lemon-scented Geranium, from last year's cuttings, in center; and at the right and left of them the Fuchsias, eight or ten inches from Geraniums. Between them variegated Vinca plants; at ends (or rather in corners) of box I placed two plants of French Marigolds. In other open spaces I used blue Ageratum. The two latter kinds of plants come from an early hotbed, being budded when put into boxes. All around edges were set alternately, Creeping Charley or Mt. Ivy, as often known, (anyway it is the common variegated creeper used so extensively,) and blue Trailing Lobelia. Creeper saved over, and Lobelia from same source as Marigolds and Ageratum.

In the other box I used a pink Wax Begonia from my house plants. It needed repotting so I took it, as I had the Fuchsias, on hope; but with a feeling of substituting instead of choosing plants I wanted. At either side of it placed the rose-pink Fuchsias, and at ends Rosy Morn Petunia from last year's slips. Edges and spaces filled same as others mentioned above. In tubs I used the one rose-pink Fuchsia, Ageratum, Lobelia and Creeper.

Folks look and pass on; turn back and look again. I feel I see them taking note, friends tell me I bested them this time, and I am well pleased with the result myself; and I truly expected little. "Blessed is he who expects nothing, verily he shall not be disappointed."

Another word about Rosy Morn. It is glorious, full of bloom all the while, and such a glowing pink. It trailed, too, hanging over ends and side of boxes as low as did the Lobelia. Many days one plant had 45 to 50 blooms. We, out here in Washington, are so blessed with climatic conditions, and see such a variety of beauty in plants, that I believe our greatest lack is means to buy the many we desire, of varieties not easily raised.

MRS. J. T. DODGEN, (Wash.)

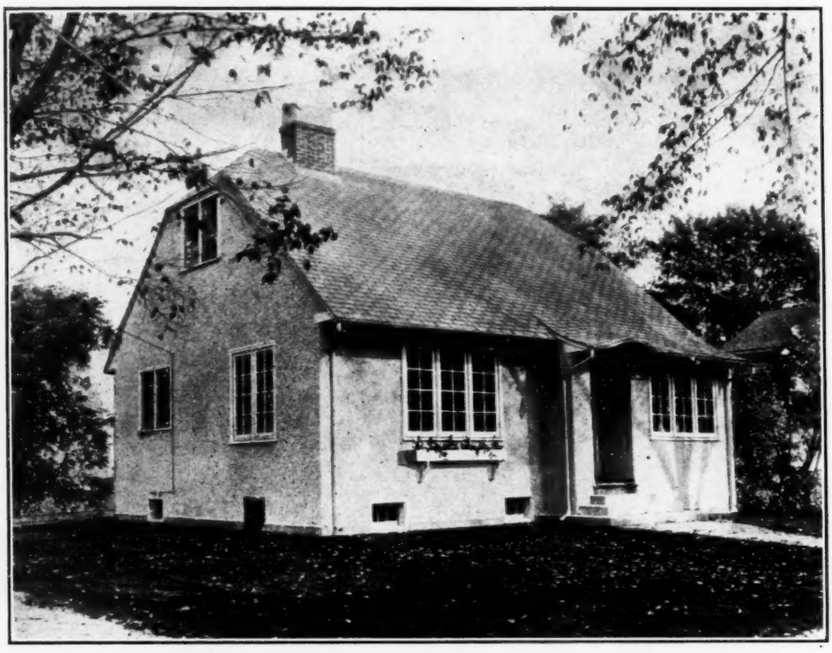
Small Home with Picturesque Exterior*

By The Architects' Small House Service Bureau of the United States, Inc.

THE average three and four room bungalow is without doubt convenient and comfortable to live in, but it is seldom distinguished for its architectural beauty.

MATERIALS USED: Construction is wood frame on masonry foundations, stucco finish. Can be siding.

APPROXIMATE SIZE OF LOT: 40-ft.

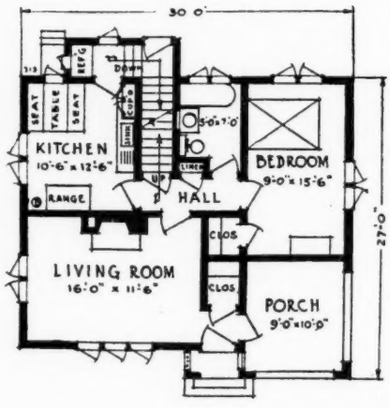


Copyright 1925—The Architects' Small House Service Bureau—Home Plan No. 3-A-2

While practically square in plan, the clipped gable ends remove any tendency toward a box-like appearance. The little eyebrow hood over the entrance and the triple window in the living room add to the beauty of this design, 3A2. The porch can be enclosed or left open, as desired.

This plan provides three main rooms, bath and three closets. An additional bedroom may be finished off in the attic. Only the first floor arrangement is shown here, but the working drawings for the second floor are included with the plans.

FACING: Plan, as shown, is for a North or West facing. It can be reversed.



*Questions addressed to the paper will be answered by the Architect's Small House Service Bureau of the United States, Inc., controlled by the American Institute of Architects and indorsed by the department of commerce, United States government. Inclose self-addressed, stamped envelope for reply.

Paperwhite and Chinese Narcissi

REPLYING to inquiry on page 44, January issue:

All Narcissi require a year to complete the round of their development, and no bulb which has blossomed in Winter or Spring will do so again the following Summer under any circumstances. Possibly these two varieties, if forced in abundant soil under the best conditions, and kept growing under best conditions until the leaves are shed; and then properly stored and started again, would bloom again the following Winter or Spring; but it is considered so uncertain by those experienced in the business that they do not attempt it. Possibly if, instead of curing off, they are allowed to summer over without disturbing, and barely enough water given that the roots do not dry up, and then started rightly the next Fall, they would have a better chance. I had a Polyanthus bulb so kept which bloomed the second Winter, but had not the first, because not sufficiently mature the first Winter.

Narcissus bulbs set out in Spring after being grown indoors do not start new growth, but merely ripen off the growth then under way and become dormant in early Summer, the same as outdoor-grown bulbs. The length of time to rest a bulb is until planting time the next season, and planting time is when the bulbs come on the market, except that bulbs to be grown in water should not be started until the basal ring shows signs of intending to push root-growth.

Paperwhites and Chinese Narcissi are not adapted to outdoor growth in this country; except in the warmer parts of the country,—the Gulf Coast region and parts of California.

As to the length of time necessary to develop Narcissus sets to blooming size; that depends on the stage of development of the sets, and some, perhaps, on the seasons and the types or varieties. Sets are of all stages, from barely started little thin ones, to larger ones all but ready to develop a bud. The large ones would develop the bud the first year; the very smallest might require two years additional,—probably would.

Bulbs which have bloomed in pebbles and water would require two years to recuperate, as they have to get their nourishment out of themselves, and are utterly exhausted when through blooming, and are not worth the trouble of attempting to bring to bloom again. Unless wanted for the beauty of their foliage while it lasts, they had as well be thrown away as soon as through blooming.

Since writing the above I find buds on two "hold-over" bulbs, one in fiber and one in charcoal. This latter maintained its roots alive through the Summer, though otherwise the bulb was dormant. Some bulbs that were held over in pots seem also to have buds. Not much is to be expected of hold-over bulbs the second season, however, for reason additional to that of exhausted strength:—the splitting up of the bulbs the second year into small divisions.

BENJAMIN C. AUTEN

Browalia Elata

Linnaeus, the Swedish botanist had written an article on plant life, advocating some new theory that was disputed by the naturalists of the day. John Browall, Bishop of Sweden, came to Linnaeus' relief with a paper supporting him—Linnaeus was so pleased and elated that upon the discovery of this plant he named it Browalia Elata.

Later on he discovered another species but at this time he and the Bishop were at swords points over some matter and Linnaeus called it Browalia Demissa.

Finally the third species was found at a time that Linnaeus and the Bishop were not on speaking terms, and Linnaeus called it Browalia Eliminata.

W. C. EGAN

Wayside Ramblings

GLADIOLI FROM PLANTING TO BLOOMING IN 1924

Data on Gladioli during past season, giving name, date planted, date of first blossom, together with time elapsed between.

Variety	Planted	Bloomed	Time
L'Immaculee	May 22	Aug. 7	77 days
Orange Glory	"	" 20	90 "
Herada	"	" 13	83 "
E. J. Shaylor	"	" 11	81 "
Princepine	"	" 24	94 "
Halley	"	" 5	77 "
Pink Perfection	May 23	" 23	92 "
Conspicuous	"	" 7	76 "
Blue Bird	"	" 16	85 "
Mrs. Frank Pendleton	"	" 13	82 "
Mrs. Watt	"	" 30	99 "
Baron Joseph Hulot	"	" 14	83 "
Empress of India	"	" 7	76 "
Schwaben	"	" 20	89 "
F. J. Symms	"	" 30	99 "
Altair	"	" 12	81 "
Majestic	"	" 4	73 "
Evelyn Kirtland	"	" 19	88 "

Thus this small assortment gave me one or more new blooms on each of thirteen days out of the thirty-one during the month of August.

The quickest results were from Kunderd's "surprise Collection"; blossoming in sixty-eight days from time of planting.

The varieties attracting the most favorable comment from all who saw them were Le Marchal Foch and Herada.

Orange Glory showed the greatest bulb increase, I planted twelve bulbs and harvested twenty-one, while the Le Marechal Foch increased but one bulb out of fifty-one planted but showed the greatest increase from bulblets.

H. W. BLANDING, (Western N.Y.)

"STRANGER FLOWER" (OENOTHERA)

In answer to Benjamin C. Auten's challenge to count the seeds of Oenothera (White Evening Primrose) on Balboa Island I would say that being an exceedingly busy person, I will not attempt the task, but would also add that we do not care how much this pretty flower spreads on our island. It may be that plants that are cherished by some people are nuisances to others, but on this sandy waste of land the lovely, gray-green foliage of this plant, creeping about over the sand, is a sight we never tire of. There are large areas of sand on this island where nothing but large, coarse weeds grow and flower, so the delicate beauty of the Evening Primrose is especially welcome. Even the good lady who cherished the first small plant has never complained of its spreading proclivity. She sets it in borders, plants it in beds in her yard, and rejoices in seeing it flourish to its heart's content outside. Nearly every person on the island who lives there the year around—they are few as yet, as the place is a summer resort—sets some of the plants out in her yard. Many summer people walk past "Miss Kate's" house of an evening, or early morning, just to see the cloud of bloom on the Primroses, and the exquisite beauty of the long, pointed pink buds.

There is much in environment and the proper setting for a flower. Just imagine a California summer evening on a tranquil bay, the sun plunging down into the sea, as its habit is here. There is the brooding hush that settles over the landscape at that hour, and the flush of rose and pink and pearly gray over the distant hills; a satin-smooth, opaline tinted bay; the soft lap of waves on the beach. It is a crime to stay indoors, so we get out and walk. Remembering the "stranger flower" we go to see how it is doing. An exquisite, delicate perfume greets us before we arrive. Hundreds of flowers, with satiny white petals overlaced with a tracery of stamens and pistils, stand out against the silvery green foliage, and pale pink buds are forming for the morrow's blooming. Dozens of huge moths flutter about. If we wait a moment we will likely see one of the swollen today buds open with the jerk which is characteristic of this flower. There is an indescribable witchery about the scene. And even yet it is a mystery to us how this flower happened to take root on our sandy island and how it got there in the first place, since there is no other place within a radius of at least forty miles where it is found. A migrant bird dropped the seed, we suppose; but we foolish, nature-loving islanders, not having gotten entirely over our belief in fairies, like to imagine it came there to make us happier. And as I had so often searched the island over, trying to find something different, I still remember the thrill of finding the one wee plant with its one flower and the tomorrow bud.

And I fancy if Mr. Auten ever experiences the witchery of the hour and the sight I have feebly tried to describe above he will be ready to exclaim: "Let her spread!"

DELPHIA PHILLIPS

EFFECT OF ELECTRIC LIGHTING ON PLANT GROWTH

When I was a member of our Council I had a strong street light placed where it came at one end of my garden. Before this was done I did not notice that one part of my garden was more advanced than any other. This last year a row of tomatoes 100 feet long commenced near the light and ran to the far end of the garden. The tomatoes under the light ripened about ten days ahead of those at the opposite end of the row. I also had three different kinds of Asters under the light which bloomed fully ten days ahead of the same kind in a dark corner of my garden. It also worked same on beans.

A. W. DE LONG, (Conn.)

SPRINGTIME FLOWERS OF THE SAND DUNES

"Springtime flowers of the Sand Dunes" by C. H. Robinson fills a long felt need and is most enjoyable to read. In speaking of the Adder's Tongue, he says erroneously called "Dog-tooth Violet." True they are both ugly names and seemingly inappropriate and I agree Faun-lily or Trout-lily would be more suitable. But when it is known that "Dog-tooth" comes from the resemblance of the seeds in the pods to the teeth of dogs, and "Adder's Tongue" to the sharp purplish points of the young plants as they shoot up, the significance can be seen. The full grown purplish spotted leaf could nicely apply to the skin of an adder but not to its tongue.

Then Mr. Robinson mentions both red and white varieties. I never saw a red one nor do my botanies mention one. Its genus name (Erythronium) is the Greek name for red, but it is inappropriate for even the original European species which is rose-purple. The color is light yellow or pale russet-yellow and bluish white. The flowers are sensitive to the sunlight (moving with sun like a Sun-flower) and close at night.

Then the Birdfoot Violets of which I remember picking many, has *two* upper petals in rich velvet, instead of "having *one* petal large, of deep velvet purple color."

RENA BAUER, (Wis.)

TREES, SHRUBS AND PERENNIALS

Perennial flowers are supposed to be as little trouble as anything in flower growing, and annuals in comparison are regarded as very laborious; but it should not be lost sight of that trees and shrubs require practically no care. Once planted, trees and shrubs only require that they have sufficient fertility and moisture for suitable and continuous growth. Fertility may be supplied by cover crops or broadcasting manure or commercial fertilizer. Perennial borders, even though hardy, need to be looked after every Spring and weeded during the Summer to keep them in good condition. It requires very little more time and attention to make a suitable planting place for annuals than to take proper care of perennials. Soil kept well cultivated and no weeds allowed to grow, requires comparatively little attention. When weeds get the start is where the labor comes in. Border flowers of any kind need continuous care and attention for anything like satisfactory results, while flowering shrubs and trees require least attention and should be fully considered in planting scheme of every flower lover. —(*Portland Roses and Flowers*)

ADIANTUM CAPILLAS VENERIS

Identification uncertain. A delicately, beautiful Fern found growing on seepy sandstone cliffs in Southwestern canyons. The ten to sixteen-inch fronds have a black, polished stem; with numerous, hair-like side branches, and flat, laciniated leaflets bearing some resemblance to those of the eastern Maidenhair; the whole looking as if pressed. It forms dense masses, with running rootstocks and a multitude of fine rootlets that force apart the grains of sand and form broad mats on the face of the rock.

W. A. BRIDWELL

TO RID THE LAWN OF PLANTAINS

I found a very easy way to rid the lawn of Plantains, Wild Carrot and other coarse weeds. It is to stab down into the heart of the plant when young, and pour in kerosene, which can be easily done from a small oil can and no danger to surrounding grass. This worked like a charm for me.

A. R. C.

CACTI IN NORTH DAKOTA

To C. H. Robinson I would say that we have at least three varieties of Cacti that are native to North Dakota; and at least two of our three varieties are found in the very extreme northwestern part of this state and they extend well up into Alberta, Canada.

Mamillaria vivipara, or Ball Cactus, has very pretty purple flowers; while Opuntia polycantha, or O. missouriensis (Prickley Pear), has yellow blossoms and resembles in general appearance his Opuntia vulgaris as shown on page 441, November FLOWER GROWER. Opuntia fragilis is of similar growth, but is much smaller in all its parts, as the sections or leaves are only about two inches in length by an inch or less in breadth. I have all three varieties growing in my garden and all seem to be entirely hardy and perfectly contented.

A native New York Cactus that was planted with them winter killed entirely the very first Winter; although it had made an excellent growth and went into winter quarters in apparently first class condition.

FANNIE MAHOOD HEATH

CARDAMOM NOT CARDAMON

I note on page 70 of February issue that the same mistake is made by Chas. E. Parnell that the writer in his younger days constantly made, i. e. *CARDAMOM* is correct, and not Cardamon. All through the article it is Cardamon except where you have cited the true name from J. L. Childs' catalogue.

The variety Eletteria Cardamom is the fragrant seed pods found in most all drug stores. I am going to try out some of these seeds, (outside should of course be broken,) and start them under glass. If successful will write you later. It is worth trying and I was glad to read the article as I have sold the seeds for over fifty years in my store.

AZRO M. DOWS

ABUTILON

A correspondent (H. S.) writes to ask if the Abutilon will endure a low temperature if allowed to become pot bound, and what causes the yellow margins of the leaves to become a rusty brown, and why the leaves drop off more or less in Winter.

To keep the Abutilon in a satisfactory condition during the winter months, the plants should be given a light and sunny situation and an average temperature of 60 degrees. The plants should not drop their leaves during the winter months, and if they turn rusty and brown, it is because they are not properly supplied with water. They should not be permitted to become pot bound at any time, but shifted on into a pot one size larger whenever it is necessary.

CHAS. E. PARNELL

MONTBRETIAS

I have grown Montbretias for a number of years and the finest I have ever had were where they were left in the ground over Winter with a covering of coarse manure. They will bloom a few weeks earlier than if planted in the Spring. Every second year they should be reset as they multiply rapidly.

A. W. DE LONG, (Conn.)

Tulip Cultural Directions

My friend, A. J. Gemmill, Secretary, Sauk County Horticultural Society, Wisconsin, sends me Tulip cultural directions, prepared by R. B. Griggs, who has had many years experience with this plant. The directions are as follows:

The bulbs may be planted any time in September or October, the earlier the better. They may be planted any time before the ground freezes. Tulips make their root growth in the Fall after planting and do better if planted early and deep. October first is a good time to plant. Plant the small bulbs early by themselves. Plant in well drained, good mellow garden soil, if you have it. Sand may be mixed in with very heavy soil. They will do quite well almost anywhere, if the soil is well worked and mellow. Plant deep, at least four or five inches deep. They stand the Winter better when planted deep. If you intend to take the bulbs up in June of each year, plant in rows about four inches apart, and set the bulbs about three inches apart in the rows. They show up better when in bloom if planted close together. If the bulbs are to be left in the ground two or three years, then make the rows five inches apart, and set the bulbs four inches apart in the rows. The large Darwin Tulips should have more room. A good way to plant is to remove about four inches of the top soil from the ground required, to one side, then dig up and loosen the remaining soil and level with a garden rake. Make the beds about three feet wide with a path between. Then set the bulbs in the ground about the depth of themselves. When the bulbs are set, put back the soil removed to an even depth, and level as before with a garden rake. Raise the beds slightly above the surrounding soil to insure drainage. The beds may be covered with a thin covering of leaves late in the Fall, and that covering left on in the Spring. If planted deep they will do well without covering. If a heavy covering is put on it should be removed very early in the Spring.

Early Tulips will usually bloom the fore part of May. Darwin Tulips and other late Tulips, from the middle to the last of May. Pick the flowers. The bulb will be spoiled if allowed to mature seed. After the Tulips are done blooming, the forepart of June, or when the foliage turns brown, and before it is dead, take up the bulbs. The partly green foliage is a string on the bulbs, so that they can be easily found. Many growers take up the bulbs in June of each year and plant them again in well prepared soil in the Fall. They are best dug every year and replanted. Others leave them in the ground two or three years at a time, and then take them up. The ground should grow some other crop in the Summer. When the bulbs are taken up, remove the foliage, allowing part of the soil to remain on the roots. Place in shallow boxes and store in a dry, airy room or shed, out of reach of the sun, so that the process of drying may not be unduly hurried. After the bulbs are quite dry, they should be cleaned, the offsets taken away from the large bulbs and all placed in a dry room or cellar, out of reach of mice, to remain until the end of August when they should be sorted.

It is well to make at least three sizes. The largest and finest are to be kept for October planting, and should be planted by themselves. The next largest, all larger than a filbert, should be sorted out and planted in September for growing on, and should make fine flowering bulbs the next year. The smaller bulbs will take more time. You can save your own Tulip bulbs from year to year, and if the sorting into sizes is properly done, get just as good results as can be obtained from any that come from Holland.

Thunbergia Alata

So many people ask me the name of this plant that I imagine it is not grown as freely as it deserves. It is a climbing annual vine growing seven to eight feet tall, blooming freely all Summer. Its flowers are about an inch in diameter, generally some shade of yellow or orange and occasionally white. They are broadly tubular, the throat being a dark brown. It is a native of South Africa, introduced to cultivation in 1823, and named in honor of Professor Thunberg. The specific name *Alata* means "winged" referring to the flanges, or extensions of growth on the flower-bearing stems. It should be started in the hot house or hot bed, and planted out after all danger of frost is passed.

I grew it against a mass of Akebia Vine that covers the space from the ground up to the top of my porch railing, some six feet above ground. I insert wire pegs in the ground and run "silkaline" from them to the top of the railing. The Thunbergia runs up this support and in and out among the Akebia, the flowers always facing out in search for light. A few Clematis Coccinia are planted among them, their scarlet flowers making a pleasing contrast with the yellow and orange of the Thunbergia.

W. C. EGAN

Fertilizing Peonies and Irises

In regard to fertilization of Peonies and Iris. I think it a pity if two such fine hardy plants are to be cultivated to such a fine point they cannot stand natural methods.

My experience is limited to a bed of each, but I have had them for over thirty-five years, and have always used well rotted manure with most satisfactory results.

Last Spring, for the first time, mindful of Peony growers' advice, I used a dressing of a commercial fertilizer (according to directions) on the Peony bed, and not only the Peonies but everything else in the bed, Narcissi, Bleeding Heart, and Tulips, had soft floppy stems, the Peonies lying almost flat. This Spring I have returned to well rotted manure and await results.

MARY L. COOKE

Queries and Answers Department

Propagating Dahlias from Cuttings

To THE EDITOR:—

How do you take Dahlia cuttings? When do you take them and how to care for them?

Do the plants grown from cuttings produce tubers?

Please let me know as soon as possible. Have been watching your Q. and A. section in THE FLOWER GROWER but found nothing of this sort.

S. S. W.

Answer:—Propagation of the Dahlia by cuttings is comparatively easy, and plants thus obtained produce better blooms, and form a clump of tubers the first season. A clump of tubers is taken from storage in February or March and covered with friable soil, or sand, or sphagnum moss. Any medium that will hold moisture is suitable, keeping the clump moist, but not wet. Air temperature of from 60 to 70 degrees will soon start the sprouts.

Clean sand is used for rooting the cuttings, and the amateur with only a few dozen cuttings can sterilize the sand by heating in the kitchen oven.

The sprouts are ready to be taken when they have two sets of leaves. When only a few cuttings are needed success will be more certain if a heel is left with the sprout—a little bit of the tuber dissected with the sprout. Such a cutting is almost certain to grow. Fifty cuttings is considered a safe maximum by some growers, from a single clump of tubers.

To obtain as many plants as is safely practicable the cutting is taken from the sprout with a sharp knife immediately below the set of leaves next the tuber. This will leave a stub on the clump from the base of which new sprouts can start, to be taken when large enough. On either side of the stub left on the tuber shoots will appear in due time and can be cut for rooting when two sets of leaves have formed. The knife should be keen, and the cut made close to but not through the joint formed at the node where the leaves start. Should the cut be made through the joint the resulting plant's tubers will probably be blind—without buds or eyes for the next season s sprouting. If the cut is made too far below the joint only a mass of fibrous roots may result, without the formation of a clump of tubers.

Having made the cutting properly the lowest pair of leaves should be trimmed off close to the stem, and the stem firmly planted in sand nearly up to the second pair of leaves.

Bottom heat of 70 degrees is almost imperative. That is, the bottom of the mass of sand, nearest the radiator or other heat supply should be 70 degrees, Fahrenheit, with the temperature of the air in the room 65 degrees. Unless the amateur can supply and maintain this bottom heat his efforts will not succeed in most cases. An accurate thermometer should be used, and the heat of the steam or hot water radiator regulated by the valve.

The cuttings should be grown cool at all times, to ensure sturdy vigorous plants, but the bottom heat must be provided. If the amateur can make arrangements with the owner of a greenhouse he better do so rather than attempt to root his cuttings himself. The greenhouse will have the proper air and soil temperatures, fresh air, daily supervision, and often a nominal charge of only ten cents per plant is made for the small space required for the amateur's lot of cuttings.

Let the amateur become convinced that bottom heat must be provided and maintained. Good judgment will send him to a greenhouse.

After the cuttings are carefully and firmly set in the sand, they must be watered carefully, and the set of leaves above the sand sprayed every day, twice a day if necessary, to prevent the wilting that evaporation of the water in the cutting and foliage would otherwise bring about. The sand must be kept moist, but not soggy with water. The air of the room must be always fresh. The stagnant air of a closely shut room will be fatal. Many dwellings have a certain amount of coal gas in the atmosphere, from heaters, stoves, and the gas that escapes for a moment when a gas stove or a gas lamp is being lighted. This gas is always harmful to growing plants. Even so small a proportion as one part gas to many thousand parts of air will kill Carnation buds in less than 48 hours. Air must be fresh, but there must be no draughts. If the air is dead, or too dry, or too moist, many of the cuttings will die.

The cuttings should be shaded from direct sunlight, using white paper, or cheesecloth. In about three weeks tiny hair-like roots will appear, and the cuttings should be transferred to flats, or to three-inch flower pots of clay or paper, clay much the better. During the three weeks that the cuttings are starting their rootlets the stubs of the sprouts left on the tubers will be growing their side shoots, which can be cut off in due time, and rooted. And so on, until the vigor of the tuber sprouts seems to be too poor to warrant using.

In transferring the delicately rooted cuttings the fullest measure of success will be attained by using a compost six parts friable or fibrous loam, two parts year old and finely divided cow manure, two parts sifted leaf mould, one part sand.

Plants produced by cuttings almost invariably produce better blooms than those grown from planted tubers. Many commercial Dahlia growers now offer green plants at decidedly lower prices than field grown tubers. These plants are sent by insured parcel post a thousand miles in safety, arriving in excellent condition for planting in the open garden.

Being insured, the grower can afford to, and almost all growers do cheerfully replace the green plant as they are called in the trade, if the package is hopelessly injured in the mails. Very few plants suffer loss, however, and the amateur can be sure of receiving, by mail, even at a distance of a thousand miles, green Dahlia plants, perfectly grown, that will produce for him a splendid plant, equally splendid blooms, and a clump of tubers, all the first season.

CHARLTON BURGESS BOLLES

Construction of Propagating Table

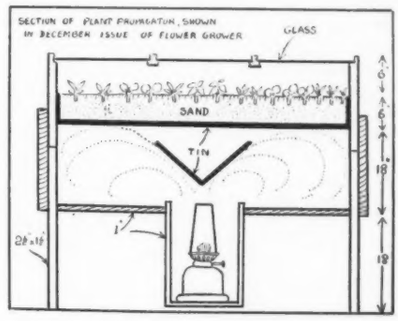
To THE EDITOR:—

On page 471, "How Cuttings are Rooted," December 1924, by Thomas Sheward, I would like a little more information as to how to build a propagating table, such as shown in the illustration with that interesting article.

Especially how thick should the layer of sand be? I want to make a propagating table that is like those used in Europe, that is a tight case, instead of the open bench as is usually used here. The case has a box and is covered with a glass. How much space should there be between the top of the sand and the glass cover? Something like Rose grafts.

H. R. M.

Answer:—The diagram shows a sectional view of the plant propagator, shown in December issue of FLOWER GROWER, page 471.



It is made in the form of two boxes, one resting upon the other. Bottom box is a hot air chamber, heated by a lamp; or better still, by electric light bulb. If a lamp is used the top box is lined with tin, and a "V" shaped piece of tin is placed directly over the lamp, to distribute the heat. There is four to six inches of damp sand in the top box, in which cuttings are rooted; and there is a glass frame on top. Space above the cuttings is four to six inches, and hot air chamber is eighteen inches deep.

A better method is to use a deep box, divided into two compartments, bottom being lined with asbestos paper, and an electric light bulb placed inside. This is turned on for an hour or so every day, enough to warm the sand in upper part of the box; and a sheet of glass, or cheesecloth is placed on top. There are a great many ways of making propagators, some very simple, in form of tables with cheesecloth covers, others more elaborate, and they are really miniature greenhouses.

Later on in the year I will show how to make the best of these.

THOMAS SHEWARD

"Own-root" vs. Grafted Roses

To THE EDITOR:—

I read your paper with much interest, and would thank you to give me some information concerning Roses:

The relative merits of Roses are in dispute among growers in at least two particulars. In the first place, some contend that Roses grown on their own roots are superior to grafted ones. Others deny this. What is the answer?

Again, some claim the field grown, others the potted Roses, are the best. Also the potted Roses are more satisfactory than the dormant ones.

Some growers advertise plants of one, two and three year, size; I want strong plants that will bloom the first year. How do I determine this from the age of the plant?

GEO. R. ROBBINS

Answer:—Personally I do not care for own-root Roses save of the hardy climbers and of some of the strong growing Hybrid Teas, and have not found that

own-root Roses are superior to budded or grafted ones in a rather considerable and wholly unprejudiced experience.

There is no doubt at all as to the desirability of field-grown rather than pot-grown Roses under equal conditions. Field-grown Roses have untrammeled roots, whereas the pot-grown Roses are usually, if of good size, field-grown and then thrust into pots. I have never known the roots to get out of the narrow confines thus established.

You say you want "strong plants that will bloom the first year." If you will buy field-grown dormant Roses just as early as you can get them and put them into the ground just as soon as it is open and ready, you will get what you want.

To get both information and guidance continually your best plan would be to take membership in the American Rose Society, where you would be in fellowship with nearly four thousand others who are interested and are always telling about it through the *American Rose Annual.*

J. HORACE MCFARLAND

Oyster Shell Scale

TO THE EDITOR:—

In the past few years we have lost most of our Ash trees through an infestation of Oyster Shell Scale. Our Lilacs are also seriously affected by them. Can Oyster Shell be controlled by applying an oil spray when the trees are dormant? We desire something that will act quickly.

M. C. M.

Answer:—The oil sprays are specific for San Jose Scale and they are often recommended for all scale insects; but here in New England the oils have not given a satisfactory control of the Oyster Shell Scale. If you open one of the scales of Oyster Shell during the Winter you will find it full of tiny whitish eggs which may be seen readily with the aid of a small hand lens.

It takes a powerful chemical to destroy the winter eggs of many insects, and those of Oyster Shell Scale are unusually well protected. I think that is why we have not been able to control this scale with any dormant spray.

These eggs hatch late in the Spring, and the young scales leave the old scaly covering and move about for a few days. Then they settle down and begin to form a hard shell over themselves,—the Oyster Shell Scale which we see. Entomologists say that the new-hatched scales are easily killed with a nicotine spray;—up to the time when they form that hard spray-resistant covering over their backs. The most vulnerable point in the life history of the insect, then, must be those few days after hatching when it is without armor. If you spray infested trees a time or two during the hatching season to kill the young as they hatch you can control Oyster Shell. I do not believe that you can harm them much until that time.

Here in Massachusetts the eggs hatch about the last of May. That date probably will not hold in your section, but hatching comes about the time the petals fall from Apple trees—that ought to hold anywhere.

If your trees are valuable and you want to be sure of immediate control, get a hand lens and examine the scales every two or three days until you begin to find the young scales crawling around. Then spray and repeat the application every three or four days until hatching is over. Two sprays probably will be enough. If the weather is warm they will hatch pretty fast, if cool, it will take longer. When you get the time of hatching in your locality, correlate it with the stage of development of the trees and you will know about when to spray for future infestations. There is only one brood, north of Pennsylvania and New Jersey, so one session with the spray rod will bring success or failure for that year, so far as your locality is concerned.

The safest spray to use is Nicotine. There are a number of good brands on the market, and probably one is as good as another. Dilute them according to the directions for plant lice.

In mid-summer you will still see the old scales on the trees, but they will be hollow and empty if you have secured control, and they will gradually drop off.

R. A. VAN METER
Massachusetts Agricultural College

Planting Small Gladiolus Bulbs in Clayey Soil

TO THE EDITOR:—

Will you kindly favor me with cultural directions for planting No. 6 Gladiolus bulbs in clayey soil which has been cut up with finely sifted soft-coal ashes?

L. N. S.

Answer:—No. 6 Gladiolus bulbs should be planted about three inches deep, and if it is desired to save space they may be planted quite thickly, with the bulbs touching each other. However, greater growth may be had by spacing about one inch apart. It is not considered necessary to set small bulbs upright. They may be simply drilled or strewn into the trench. If the soil is very hard clay and unless a heavy proportion of coal ashes is mixed with it, it is no pleasure to dig bulbs out of such soil in the Fall of the year, when it is wet. Get your bulbs planted early so they may be dug early to avoid wet digging late in the Fall.

Grapes and Tree Fruits for Tennessee

TO THE EDITOR:—

What Grape vines and fruit trees should be planted in the home garden in middle Tennessee?

R. M. A.

Answer:—Varieties of fruits vary considerably in their adaptation, even within a state. This question can be answered best by some one thoroughly familiar with horticultural conditions in middle Tennessee. Write to the College of Agriculture, University of Tennessee, at Knoxville.

R. A. VAN METER

Storage of Pulverized Sheep Manure

TO THE EDITOR:—

We wish to purchase large quantities of pulverized sheep manure and would like to know if it would lose any of its fertilizing value if stored indefinitely in a dry place?

L. E. D. & SONS, (Ind.)

Answer:—The loss of fertilizing elements from dry pulverized sheep manure stored in a dry place would be so small as to be negligible. That there will be some loss of ammonia there is no doubt; but it will be slight.

Questions and Answers Asked and Answered by Readers

Readers who can assist by giving general or special information will confer a favor on the inquirer, as well as the Editor. A brief statement of facts and definite information is desired.

QUESTIONS

BLOOMING BEGONIA HAAGIANA

This is a magnificent plant and under ordinary house conditions, with hot water heat, I can grow it into a specimen thirty inches high and thirty inches in diameter,—a solid mass of leaves from pot to apex. It is beautiful in itself without flowers, but I have seen this plant laden down with the whitish-pink flowers, which last for three months or more, and are a sight worth seeing.

Now why can't I bloom it in the house? Will you ask the crowd?

DAVID E. BASLER

ASTER YELLOWS AND ASTER BEETLES

Will you kindly give me some information on how to prevent Aster yellows and also how to get rid of the black and striped Aster beetles? I have had quite a time during the past season with all three pests.

I have been in the garden truck business for the last thirty-five years and during the last three or four years have added cut flowers for market and find it very profitable. I love flowers almost like bread and butter.

HENRY LANGE

WORMS ON ROOTS OF ASTERS, ETC.

This year a small light green worm about one-half inch long has been eating and boring into the roots of my Salpiglossis and Asters just about the time they are ready to bloom. Is there any way to combat the pest at time of planting or later? P. J. T.

Several suggestions along this line have appeared in recent issues of THE FLOWER GROWER but readers having further suggestions to offer will be welcomed to this department.

REMEDY WANTED FOR IRIS BORER

Last Iris season I was troubled with Iris borers. Recently I burned over some of my common varieties, scorching some of them down to the rhizomes. Early in the Spring I want to spray my expensive varieties, hoping to kill the borer in the leaf before he descends to the root.

My question is, what solution must I use when spraying? W. A.

VARIOUS QUESTIONS

Why is Solanum called "Jerusalem Cherry"—since it has no pit but rather seeds?

Why do my Begonia leaves unfold crooked and out of shape—often with holes and breaks in them?

What causes a brown rust on underside of Cyclamen leaves—and remedy?

How can I retain the variegation of Anthericum?

Please describe Begonia *Glorie de Loraine* and tell me where I may secure the true variety.

"PRIMROSE"

ASTER ROOT LICE

Two years ago I grew wonderful Asters. Last year they were literally eaten up by the root louse. I pulled and burned all the roots with all the root lice I could secure. Ants were present about the Asters but I failed to find the nests from which they carried the root lice to put on the Aster roots. Putting my Aster beds in a different place will not likely help as I had them in different parts of my garden and all were affected alike. Will the putting of tobacco dust in the soil about the roots of the Aster plants at planting time prevent me from being troubled with this pest?

I tried making a tea of tobacco and sprinkling this about the roots of some of the plants last year but it seemed to make no difference. I will appreciate any advice you can give me that will help me overcome this difficulty.

WM. GRANT SMITH, (Ind.)

CARE OF RUBBER PLANT

I would like to see something in THE FLOWER GROWER about the care of Rubber Plants in the house, and how they are made to branch.

N. K. R., (Ont.)

SELLING FLOWERS FROM HOME GROUNDS

Will some one kindly give practical information in regard to selling garden flowers at retail from one's home grounds?

B. H., (Iowa)

RUST ON SNAPDRAGONS

Could some of your readers kindly give me information on how to keep rust off Snapdragons grown in greenhouse for Christmas?

A. E. C.

CONSTRUCTION AND SETTING OF MARTIN HOUSE

What is proper size hole to make in a Martin House and should it be round or square?

How high should pole be above ground, and how large should the compartments be made?

E. J., (Ohio)

PLANTS FOR POORLY LIGHTED AND VENTILATED ROOMS

Can you give me a list of plants that are most capable of living in rather dark, with no direct sunshine, hot and poorly ventilated, steam heated mess halls? Experience teaches me that very few survive it more than ten days to three weeks.

BERRY BOWEN, (N. Mexico)

DO GERANIUMS FROM SEED BLOOM?

Please ask in your Queries and Answers department whether Geraniums raised from seed will blossom. This is the second Winter I have had several strong looking plants raised from seed, but there is no sign of bloom.

M. J. H.

LEMON GRASS

Can any reader tell something about Herva Cidreira (Lemon Grass?) Can it be found growing anywhere in the State of New York? A description will be helpful. It is claimed to have an attraction for swarms of bees, and I would like to try it experimentally.

J. T. R., (Long Island)

ANSWERS

EREMURUS BUNGEI AND TRITOMA PFITZERI

Answering Mrs. Mae Cook, page 131, March issue: Eremurus Bungei takes plenty of time, and you will have a nice long wait for flowers,—about four years. Plant them about one-half inch deep.

As to Tritoma Pfitzeri, your location has something to do with treatment. Here in Painesville one year divided plants do not winter well, though I know of old clumps that have stood our Winters for ten years. We try them in the field, heeled in, on and under the greenhouse bench, in the cellars and any other way that happens to occur to the owner, and we lose them, or bring them through, according to whatever conditions may lose or win. I do think any Painesville grower will venture a solid opinion on the effect of any exact conditions as to wintering this plant. Last report of success in wintering was that if heeled in with tops on they will come out in Spring in good condition. My stock is heeled in according to this latest recipe. I will report later. If successful I will do the same next Winter, but will expect trouble in the Spring. Plant the young stock with eyes about three-quarters inch below surface, and if you are not further north than Painesville, give them a light straw mulch in Fall and they will probably stay with you.

R. E. HUNTINGTON, (Ohio)

DEPENDABLE YELLOW ROSES

Answer to Lindwood Goodwin:

I desire to supplement Mr. McFarland's excellent selection by mention of two others, one an old-timer.

The bloom of *Souvernir de Pierre Notting*, though not a bright yellow, is, however, yellow throughout its life, and double and of reasonably good form. The color ranges from light coppery yellow, to deeper and sometimes clear apricot-yellow. It is a Tea of more than ordinary hardiness, free in bloom and growth. It is one of my favorites.

Lady Hillingdon is dependable as to growth, blooming and color, but is only semi-double.

CHAS. E. F. GERSDORFF

CARE OF POINSETTIA

W. G. S.:—As soon after finish of blooming as weather will permit, sink pot into earth in garden, when it will make new side growth shoots or "slips" four or five inches in length. Break off and root in sandy spot prepared in garden bed, potting up in good soil in early October and taking into house. Keep cool a few days to settle them into new growth; then place in light or sunny window in warm room.

Above is nurseryman's advice to me and have tried it out successfully twice.

MRS. J. T. DODGEN

TO PREVENT LILACS FROM WILTING

Immediately they are cut, take a hammer and pound the stem nearly to a pulp for three or four inches from the cut end. They will then keep fresh in water for several days without wilting.

MRS. H. L.

Bridwell's Poem

Don't overlook the Bridwell poem, on page 189, entitled "Eden Regained." Brother Bridwell had given this the title "Eden Lost," but my Poetry Editor agreed with me that "Eden Regained" is correct. Surely when a man has fought for many things which he finds are not worth while; and striven mightily for prizes which are not worth the struggle; and finds that the things in nature are the things really worth while; he has really regained his Eden.

Read the Bridwell poem carefully and study it well. It will give you an outlook on life which is surely worth while. It is very evident that Bridwell has travelled the rough highway of life to some purpose.

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(Signed) MADISON COOPER

Sworn to and subscribed before me this 27th day of March, 1925.

(Signed) HARRISON J. ANGLEY, Notary Public,
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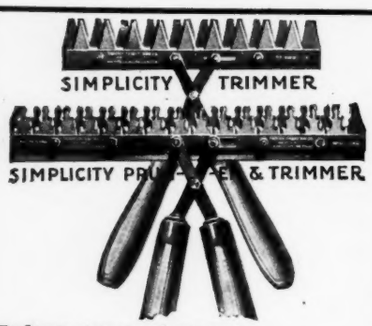

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